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Thesis

ADMINISTERING A CORRECTIVE-READING PROGRAM IN NINTH-GRADE ENGLISH CLASSES OF A SMALL HIGH SCHOOL

Submitted by

Gilbert Chauncey Mann

(B.S., University of Vermont, 1915)

In partial fulfillment of requirements for

the degree of Master of Education

1938

First Reader: Roy O. Billett, Professor of Education

Second Reader: Donald D. Durrell, Professor of Education

Third Reader: George K. Makechnie, Assistant Professor of Education

Boston University
School of Education

Gift of G. C. Mann
School of Education
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FOREWORD

The cooperation of a number of individuals has made this study possible, and their assistance is gratefully acknowledged. The writer is especially indebted to Miss Barbara Nickerson of the staff of the Oliver Ames High School, North Easton, Massachusetts, who has so willingly and faithfully conducted the class-room teaching upon which this study is based. To Mr. Gilman H. Campbell, principal of the same high school, whose frequently expressed feeling of the need of some sort of action along the line of improving reading abilities of high-school students inspired the study, the writer is equally indebted. The assistance of Miss Alice Harvey in correcting tests, and of the Easton School Committee in providing the standardized tests used in the study, is acknowledged.

GILBERT C. MANN

July 6, 1938

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GILBERT C. WARD

July 8, 1938

CHAPTER I

INTRODUCTION

The Problem

Changing conditions and the reading problem.-- The rapidly changing conditions of American life are constantly producing problems which demand solution. The field of education is as subject to the influences of these changes as are the fields of business and government. A generation ago our secondary-school population was composed largely of those individuals who had survived the selective process by which our school systems had eliminated those who, according to the standards of the times, were academically unfit.

Present day conditions decree that practically all children must remain in school until they are at least 16 years of age. This fact has brought into the high school large numbers of young people to whom our secondary schools of pre-war days would be poorly adapted. One of the problems which administrators and high-school teachers are being forced to face is that of the poor reading ability possessed by many of these boys and girls. Ruth M. Strang 1/ of Columbia University's Teachers College comments on the problem in the following words:

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could read. Boys and girls who were poor readers dropped out of school early. That factor of selection offers the most plausible explanation of the reputed absence abroad of serious reading difficulty in institutions corresponding to our secondary schools.

"In the United States, however, the increased proportion of the entire distribution of adolescents who attend high school includes many poor readers. Nearly one-fourth of more than five thousand ninth-grade students tested did not exceed sixth-grade level in comprehension. Reading ability as low as this may account for the failure of many high-school pupils."

Writing as recently as 1936, Professor Roberts 1/ of Leland Stanford University calls attention to the newness of the problem, in so far as a proper recognition of it existed in the minds of the rank and file of high-school principals and teachers, in the following words:

"Within the period of a single year the high schools of the United States have become reading conscious. Before that time the majority of teachers and administrators had assumed that all pupils who entered high school could read.

"Now we know that entering high-school freshmen vary in reading ability from third or fourth grade level to superior adult capacity. From 10 to 20 per cent of high-school pupils are seriously retarded in reading. Many of them cannot understand the books, magazines, and newspapers placed in their hands."

The problem in the small high school.-- While high schools in general were perhaps slow to recognize and attempt to correct the problem of reading deficiencies in a considerable proportion of their enrollments, the small high school, for a variety of reasons, apparently has lagged behind the larger secondary schools in this respect. A perusal of nearly 40 articles on remedial or corrective reading in secondary schools listed in the Education Index since

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July 1, 1932, failed to reveal more than two or three which had special reference or application to the small high school. (The term "small high school" is used in this discussion to designate secondary schools enrolling fewer than 100 pupils per grade.)

There are several apparent reasons why the small schools have been slow to attack the problem. Probably in the last analysis they are reducable to the one problem of expense, although lack of leadership may be another reason. The small number of divisions per subject, making the sectioning of groups on the basis of ability in a subject difficult, the heavy teaching loads of teachers, particularly in variety of subject matter taught, and the providing by school committees of a minimum staff of teachers, all contribute to the difficulty of allotting special time for remedial-reading instruction. One who has worked in a small high school will be only too conscious of these limitations.

Statement of the Problem

Definitions of terms.-- It is essential that a distinction be made between the terms "remedial reading" and "corrective reading". Traxler [1] defines them as follows:

> "'Remedial reading' is understood to apply to the techniques adopted with retarded pupils who are so seriously handicapped in the basic reading skills that they require the use of unusual procedures and individual attention in overcoming their deficiencies. 'Corrective reading', on the other hand, designates the procedures used with retarded readers whose difficulties will respond to treatment within a group through the use of methods that may be employed in

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Throughout this study, these terms have been used in accordance with the above definitions.

The terms "secondary school" and "high school" are used interchangeably in this report, and are inclusive of both junior and senior high schools (grades 7 to 12). The term "small high school" has already been defined. Other technical terms used in this report are used with their generally accepted meanings.

The problem stated.-- As intimated above, the literature of remedial and corrective reading at the secondary-school level deals chiefly with the medium-sized or large high schools. Very little has been reported regarding efforts to improve the reading abilities of slow or poor readers in the high schools enrolling fewer than 100 pupils per grade, and presumably little has been done on the problem in the typical small high school. Practical experience in small high schools tells one that it would be difficult to carry on a successful program of "remedial reading" in typical schools of that size. Furthermore, it would be difficult to make up special classes for "corrective-reading" instruction in the "run of the mill" variety of small high school, because of limited teaching time available. In general, the literature on the subject suggests individual work with "remedial-reading" cases, and work with small groups in separate class periods for "corrective-reading" cases. While these plans undoubtedly are superior in situations where they are workable, nevertheless it is apparent that a different plan must be formulated for many small high schools, if the reading problem is

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to receive attention under present conditions in such schools.

It is unlikely that the staff of the average small high school will include a teacher who has had special training in the field of remedial and corrective reading. This lack of special training can without doubt be overcome to a considerable extent by independent study, provided the interest of the teacher is adequate. Nevertheless, in view of the frequently short tenure of positions in the small high schools, it is probable that little could be expected from regular members of the staff along the lines of remedial-reading instruction, even if time were available, because of the difficulties of adequate diagnosis. Corrective reading, however, offers a less serious problem.

A number of studies have made reference to the logical connection of the corrective-reading problem with the courses in English. Hovious 1/ has produced one of the most tangible programs in corrective reading in the form of two textbooks designed specifically for group work; however, of at least one of the books she 2/ states that in traditionally organized schools it .... "fits most easily into the regular English class, especially since the reading program

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In this study, conferences concerning corrective reading were held by the writer with the high-school principal and the English teacher who handled ninth- and tenth-grade English classes in a six-year high school enrolling slightly fewer than 500 pupils. The result was that plans were made to try an experiment with group corrective-reading instruction in the regular ninth-grade English classes. The problem included the testing of all members of these classes with standardized reading tests in October and November, 1937, selecting those in need of remedial or corrective reading, administering corrective-reading instruction three or four times weekly during the last part of the class period, and later retesting to measure the effects of the corrective teaching. At first it was hoped to do some individual work with pupils who were especially in need of it, but this idea was soon abandoned as impractical, because of lack of teacher time.

The writer's part in the study thus became that of administering and directing a program of corrective-reading instruction in the ninth-grade English classes of a small high school. Details of the

1/ Mabel L. Ansley, "Extensive Remedial Reading", The English Journal (High School edition, February, 1936) 25: 121-23.

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program are given in the pages that follow.

CHAPTER II

METHODS AND TECHNIQUES EMPLOYED IN THE STUDY

Selecting the Experimental Group

The ninth-grade group:-- The ninth grade contained 86 pupils,-- 39 boys and 47 girls. They were an ordinary group of high-school freshmen, coming for the most part from homes having small incomes. English ancestry predominated, followed in order by sizable representations of Irish, Swedish and Portuguese. Individuals of Italian, Armenian, Jewish and Polish stock were included.

The ages as of December 1, 1937, ranged from 13 years 4 months to 16 years 7 months. The median chronological age was 14 years 7 months. The range of mental ages on the Terman Group Test of Mental Ability was from 11 years 9 months to 19 years 9 months, with a median mental age of 15 years 5 months. According to the Terman test (which was given on December 15, 1937) the group as a whole was somewhat above average in mental ability, (median intelligence quotient, 108).

Locating the poor readers.-- Form 1 of the Traxler Silent Reading Test [1] was administered to the entire group of 86 freshmen on October 18, 1937. This is one of the newer reading tests for the secondary-school level and includes exercises giving separate scores on reading rate, story comprehension, paragraph comprehension

1/ Arthur E. Traxler, The Traxler Silent Reading Test, Form 1. Public School Publishing Company, Bloomington, Illinois, 1934. 16 p.

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The ages as of December 1, 1937, ranged from 13 years 4 months to 16 years 7 months. The median chronological age was 14 years 7 months. The range of mental ages on the Terman Group Test of Mental Ability was from 11 years 3 months to 19 years 9 months, with a median mental age of 15 years 5 months. According to the Terman test (which was given on December 13, 1937) the group as a whole was somewhat above average in mental ability, (median intelligence quotient, 108).

Locating the poor readers.-- Form 1 of the Traxler Silent Reading Test [1] was administered to the entire group of 88 freshmen on October 18, 1937. This is one of the newer reading tests for the secondary-school level and includes scores giving separate scores on reading rate, story comprehension, paragraph comprehension

[1] Arthur E. Traxler, The Traxler Silent Reading Test, Form 1. Public School Publishing Company, Bloomington, Illinois, 1934. 16 p.

and the meaning of words in sentences. The test claimed a reliability that compared favorably with other popular tests. The relative standings of the 86 freshmen on the basis of total score were tabulated and identification numbers assigned to pupils, the pupil scoring highest being assigned number 1 and the lowest scoring pupil number 86. These numbers will be used instead of names in referring to individual members of the group in the following pages.

As it seemed undesirable to put too much reliance on a single reading test, it was decided to use as a second test an older but favorably know test,--The Haggerty Reading Examination, Sigma 3, Form A.[1/] This test was given to all members of the freshmen class on November 8, 1937. It included exercises in word meaning, sentence comprehension and paragraph comprehension. As an aid in diagnosing reading difficulties it had limited value, but as a device for sorting out poor readers it was apparently more effective.

It was decided to give the Terman [2/] Group Test of Mental Ability, Form B, to all 86 members of the ninth-grade class. This was done with a realization of the shortcomings of the test with poor readers. This test was given on December 8, 1937. The results, however, were not used in selecting the corrective-reading groups.

Selecting the corrective groups.-- The results of the two reading tests were used as the criteria for selecting the individuals who were to compose the reading groups. The 86 freshmen had been

1/ M. E. Haggerty and Laura C. Haggerty, The Haggerty Reading Examination, Sigma 3: Form A. World Book Company, Yonkers-on-Hudson, New York, 1929. 8 p.

2/ Lewis M. Terman, Terman Group Test of Mental Ability, Form B. World Book Company, Yonkers-on-Hudson, New York, 1920. 11 p.

and the meaning of words in sentences. The test showed a reliability that compared favorably with other popular tests. The relative standings of the 36 freshmen on the basis of total score were tabulated and identification numbers assigned to pupils, the pupil scoring highest being assigned number 1 and the lowest scoring pupil number 36. These numbers will be used instead of names in referring to individual members of the group in the following pages.

As it seemed undesirable to put too much reliance on a single reading test, it was decided to use as a second test an older but favorably known test,--The Progressive Reading Examination, Situ B, Form A.[1] This test was given to all members of the freshmen class on November 8, 1927. It included exercises in word meaning, sentence comprehension and paragraph comprehension. As an aid in diagnosing reading difficulties it had limited value, but as a device for sorting out poor readers it was apparently more effective.

It was decided to give the Terman[2] Group Test of Mental Ability, Form B, to all 36 members of the eighth-grade class. This was done with a realization of the shortcomings of the test with poor readers. This test was given on December 8, 1927. The results, however, were not used in selecting the corrective-reading groups.

Selecting the corrective groups.-- The results of the two reading tests were used as the criteria for selecting the individuals who were to compose the reading groups. The 36 freshmen had been

[1] V. M. Hedgerly and Laura G. Hegerty, The Progressive Reading Examination, Situ B, Form A. World Book Company, Yonkers-on-Hudson, New York, 1920. 8 p.

[2] Lewis M. Terman, Terman Group Test of Mental Ability, Form B. World Book Company, Yonkers-on-Hudson, New York, 1920. 11 p.

divided into three English sections when the class program had been made out the previous spring and it had been impossible to assign them to divisions strictly on the basis of mental ability or ability in English. No attempt was made to section them on the basis of reading ability. The result was that some poor readers were found in all three divisions. It was more or less arbitrarily decided to consider as corrective-reading cases any pupils who failed to reach the mean score of the class on the Traxler test or the median score of the class on the Haggerty test. This resulted in placing in the corrective groups a total of 33 pupils. These were distributed over the three English divisions as follows: section A, 8; section B, 5; section C, 20. At the end of the semester, on January 28, 1938, certain individuals were transferred from the C section to the B section in an effort to equalize both the total numbers in the respective divisions and the numbers in the corrective-reading groups of those divisions. After these transfers had been made the total numbers in the sections and the number in the corrective-reading group of each division were as shown in Table 1.

Table 1. Numbers of Pupils in the Three English Divisions and Number of Corrective-Reading Pupils in Each Division.

Section	Total Number	Number in Corrective-Reading Groups
A.....	31	8
B.....	25	9
C.....	30	16
Total	86	33

divided into three English sections when the class program had been made out the previous spring and it had been impossible to assign them to divisions strictly on the basis of mental ability or ability in English. No attempt was made to section them on the basis of reading ability. The result was that some poor readers were found in all three divisions. It was more or less arbitrarily decided to consider as corrective-reading cases any pupils who failed to reach the mean score of the class on the Traxler test or the median score of the class on the Gaggerty test. This resulted in placing in the corrective groups a total of 83 pupils. These were distributed over the three English divisions as follows: section A, 31; section B, 23; section C, 30. At the end of the semester, on January 23, 1936, certain individuals were transferred from the C section to the B section in an effort to equalize both the total numbers in the respective divisions and the numbers in the corrective-reading groups of those divisions. After these transfers had been made the total numbers in the sections and the number in the corrective-reading group of each division were as shown in Table I.

Table I. Number of Pupils in the Three English Divisions and Number of Corrective-Reading Pupils in each Division.

Section	Total Number	Number in Corrective-Reading Groups
A.....	31	8
B.....	23	3
C.....	30	16
Total	86	33

The reading status of each of the 33 pupils selected for corrective-reading instruction, as indicated by test scores made on the Traxler test on October 18, 1937, is shown in Table 2. It will be noticed by the numbers indicating individual pupils in the first column that a number of borderline cases which the Traxler test would have placed in the corrective group were eliminated because they equalled or exceeded the class median on the Haggerty test. Reading rate is shown in words read per minute rather than in terms of grade scores, because the rate for over half of these corrective-group pupils was so low that grade scores were not provided by the test standards small enough to permit an interpretation on a grade-score basis, except by interpolation. The effect of slow rate of reading on the total grade score (column 7) is shown by comparing column 6 (total comprehension score) with column 7 (total score including rate). An examination of the scores of pupil number 45 and pupil number 46, for example, shows that number 46 comprehends well what is read but reads slowly, while number 45, with a higher total grade score is actually one and a half school years lower in comprehension, but reads rapidly. This effect of rate on total grade score should be kept in mind in considering column 7.

Wherever an asterisk (*) appears in Table 2, it is to indicate that the score was too low to be interpreted by the test standards on a grade-score basis. All grade scores below 7-0 and above 10-9 have been interpolated, (see Appendix A, page 110). At the foot of this table the mean scores of the entire group of 86 freshmen are given.

The reading status of each of the 38 pupils selected for corrective-reading instruction, as indicated by test scores made on the Treadwell test on October 16, 1937, is shown in Table 2. It will be noticed by the numbers indicating individual pupils in the first column that a number of borderline cases which the Treadwell test would have placed in the corrective group were eliminated because they equalled or exceeded the class median on the Haggerty test. Reading rate is shown in words read per minute rather than in terms of grade scores, because the rate for over half of these corrective-group pupils was so low that grade scores were not provided by the test standards small enough to permit an interpretation on a grade-score basis, except by interpolation. The effect of slow rate of reading on the total grade score (column 7) is shown by comparing column 6 (total comprehension score) with column 7 (total score including rate). An examination of the scores of pupil number 44 and pupil number 45, for example, shows that number 45 comprehends well when is read but reads slowly, while number 45, with a higher total grade score is actually one and a half school years lower in comprehension, but reads rapidly. This effect of rate on total grade score should be kept in mind in considering column 7.

Wherever an asterisk (*) appears in Table 2, it is to indicate that the score was too low to be interpreted by the test standards on a grade-score basis. All grade-scores only 7-0 and above 10-9 have been interpolated, (see Appendix A, page 110). At the foot of this model the mean scores of the entire group of 66 freshmen are given.

Table 2. Reading Rates and Comprehension-Grade Scores Made by the 33 Pupils in the Corrective-Reading Groups on the Traxler Silent Reading Test, Form 1, October 18, 1937.

Pupil Number	Reading Rate, Words per Minute	Story Compre-hension	Word Compre-hension	Paragraph Compre-hension	Total Compre-hension	Total Score
(1)	(2)	(3)	(4)	(5)	(6)	(7)
45....	300	6-7	8-2	8-5	8-3	9-3
46....	162	10-8	8-7	11-5	9-8	9-0
48....	246	9-3	9-1	8-3	8-7	9-0
49....	192	9-3	9-1	9-5	9-3	8-9
50....	228	6-7	8-0	10-1	8-7	8-9
51....	192	10-8	8-0	10-1	9-2	8-9
53....	210	6-7	9-3	8-8	8-7	8-7
54....	276	8-4	7-4	8-3	8-0	8-7
55....	258	4-7	9-3	8-0	8-2	8-7
58....	132	10-8	9-3	9-5	9-6	8-5
60....	138	8-4	9-3	10-1	9-4	8-4
62....	222	10-8	6-4	8-8	8-3	8-4
65....	258	4-7	6-6	8-5	7-4	8-2
66....	180	6-7	9-3	8-3	8-5	8-1
67....	180	8-4	6-9	9-5	8-4	8-0
68....	138	9-3	7-4	10-1	8-8	8-0
69....	168	9-3	7-2	9-0	8-5	8-0
70....	246	*	7-4	8-0	7-0	7-7
71....	198	4-7	7-8	8-5	8-0	7-7
72....	162	6-7	8-5	8-5	8-3	7-6
73....	162	6-7	7-8	8-5	8-1	7-3
74....	162	8-4	6-1	9-0	8-1	7-2
75....	156	4-7	8-0	8-5	8-1	7-1
76....	120	9-3	7-6	8-8	8-5	7-1
77....	168	4-7	8-9	7-3	7-9	7-1
78....	192	*	8-3	8-0	7-2	7-0
80....	168	6-7	8-5	6-6	7-6	6-9
81....	246	*	6-4	7-3	6-0	6-9
82....	168	6-7	7-4	8-0	7-5	6-8
83....	126	6-7	8-9	8-0	8-2	6-8
84....	228	4-7	6-1	5-8	5-9	6-5
85....	150	*	6-4	7-3	6-2	5-5
86....	78	4-7	7-1	7-3	6-9	4-8
Standard Score	217	9-1	9-1	9-1	9-1	9-1
Class Mean a/	224.4	8-6	9-3	9-5	9-2	9-4

a/ The class means are those of the entire group of 86 ninth-grade pupils.

Table 2. Reading Rates and Comprehension-Grade Scores Made by the 35 Pupils in the Corrective-Reading Group on the Traxler Silent Reading Test, Form 1, October 18, 1937.

Pupil Number (1)	Reading Rate, Words per Minute (2)	Story Comprehension (3)	Word Comprehension (4)	Average Comprehension (5)	Comprehension Score (6)	Total Score (7)
45....	307	8-7	8-2	8-5	9-3	9-8
46....	182	10-8	8-7	11-5	9-8	9-0
47....	246	4-3	9-1	8-8	8-7	9-0
48....	192	9-3	9-1	9-8	9-8	8-9
49....	229	8-7	8-0	10-1	8-7	8-9
50....	192	10-3	8-0	10-1	9-2	9-8
51....	210	8-7	9-3	8-8	8-7	8-7
52....	276	8-4	7-4	8-8	8-0	9-7
54....	286	4-7	9-8	8-0	8-2	8-7
55....	192	10-8	9-8	9-8	9-8	8-8
56....	185	8-3	10-1	10-1	8-4	8-4
60....	222	10-8	8-4	8-3	8-2	8-4
62....	250	4-7	8-8	8-8	7-4	8-2
65....	180	8-7	9-8	8-8	8-8	8-1
66....	180	8-4	8-9	8-3	8-4	8-0
67....	168	9-8	7-4	10-1	8-8	8-0
68....	168	9-8	7-3	9-0	9-8	8-0
69....	240	*	7-4	8-0	7-0	7-7
70....	198	4-7	7-8	8-8	8-0	7-7
71....	182	8-7	8-8	8-8	8-2	7-8
72....	182	6-7	7-8	8-8	8-1	7-2
73....	182	8-4	8-1	9-0	9-1	7-2
74....	183	4-7	8-0	8-8	8-1	7-1
75....	120	8-8	7-8	8-8	8-8	7-1
76....	188	4-7	8-8	7-8	7-3	7-1
77....	192	*	8-3	8-0	7-8	7-0
78....	198	8-7	8-8	8-8	7-4	8-9
80....	246	*	8-4	7-8	8-0	8-8
81....	168	8-7	7-4	8-0	7-8	8-0
82....	123	8-7	8-8	8-0	8-2	8-8
83....	222	4-7	8-1	8-3	8-9	8-8
84....	180	*	8-4	7-8	8-8	8-8
85....	72	4-7	7-1	7-8	8-0	4-8
Standard Score 81-88	324.4	8-8	8-1	8-1	8-1	8-1

* The plate means are those of the entire group of 88 ninth-grade pupils.

Table 3 shows the raw scores and total grade scores made by the same 33 pupils on the Haggerty Reading Examination, Sigma 3: Form A on November 8, 1937. For purposes of comparison, the standard total scores for May of the sixth, seventh, eighth, and ninth grades as provided by the author of the test are given at the end of the table. Unfortunately the test does not provide standards for the three parts of the test separately, and inquiry made to the publishers brought the response that they are not available. The median score of the entire class of 86 pupils is included at the foot of the table.

Column 6 of Table 3 consists of grade scores which have been computed. Grade scores such as these were not given in the test standards. The Manual of Directions accompanying the Haggerty Reading Examination, Sigma 3,[1] gives tables showing grade norms for grades 5, 6, 7, 8, 9, 10, 11, and 12 for tests given in May. It also gives age norms by months from age 10 years 0 months to 20 years 0 months. Using these two tables, it was possible to locate grade scores with considerable accuracy from age scores. For example, the standard score on Form A for May of the fifth grade is given in the table of grade norms in the Manual of Directions as 31. The fifth grade score for May is commonly written as 5^9, since May is the ninth month of the school year. Hence a raw score of 31 was interpreted as a grade score of 5^9. Likewise

1/. M. E. Haggerty and Laura C. Haggerty, Haggerty Reading Examination, Sigma 3, Manual of Directions. World Book Company, Yonkers-on-Hudson, New York, 1929. p. 6.

Table 5 shows the raw scores and total grade scores made by the same 55 pupils on the Haggerty Reading Examination, Form A: Form A on November 8, 1927. For purposes of comparison, the standard total scores for May of the sixth, seventh, eighth, and ninth grades as provided by the author of the test are given at the end of the table. Unfortunately the test does not provide standards for the three parts of the test separately, and inquiry made to the publishers brought the response that they are not available. The medians score of the entire class of 55 pupils is included at the foot of the table.

Column 6 of Table 5 consists of grade scores which have been computed. Grade scores such as these were not given in the test standards. The Manual of Directions accompanying the Haggerty Reading Examination, Form A,[1] gives table of raw grade norms for grades 5, 6, 7, 8, 9, 10, 11, and 12 for tests given in May. It also gives age norms by months from age 10 years 0 months to 20 years 0 months. Using these two tables, it was possible to locate grade scores with considerable accuracy from age scores. For example, the standard score on Form A for May of the fifth grade is given in the table of grade norms in the Manual of Directions as 51. The fifth grade score for May is commonly written as 5^9, since May is the ninth month of the school year. Hence a raw score of 51 was interpreted as a grade score of 5^9. Likewise

[1] S. Haggerty and Laura C. Haggerty, Haggerty Reading Examination, Form A, Manual of Directions. World Book Company, Yonkers-on-Hudson, New York, 1920. p. 8.

Table 3. Raw Scores and Total Grade Scores Made by Members of the Corrective-Reading Groups on the Haggerty Reading Examination, Sigma 3: Form A, November 18, 1937.

Pupil Number	Vocabulary	Sentences	Paragraphs	Total	Grade Score
(1)	(2)	(3)	(4)	(5)	(6)
45.....	24	24	24	72	8-3
46.....	23	18	38	79	9-4
48.....	25	28	32	85	10-0
49.....	28	20	34	82	9-7
50.....	34	18	30	82	9-7
51.....	30	22	34	86	10-1
53.....	30	22	30	82	9-7
54.....	29	22	30	81	9-5
55.....	30	24	26	80	9-5
58.....	24	19	30	73	8-5
60.....	25	20	32	77	9-0
62.....	20	15	32	67	7-8
65.....	26	18	30	74	8-6
66.....	26	25	22	73	8-4
67.....	24	12	20	56	7-2
68.....	25	24	28	77	9-0
69.....	21	19	28	68	7-9
70.....	24	26	22	72	8-3
71.....	25	19	20	64	7-7
72.....	25	21	34	80	9-5
73.....	20	27	32	79	9-4
74.....	17	23	32	72	8-3
75.....	31	13	20	64	7-7
76.....	24	9	26	59	7-4
77.....	33	11	26	70	8-1
78.....	29	21	24	74	8-6
80.....	22	24	26	72	8-3
81.....	28	6	10	44	6-6
82.....	24	12	30	66	7-7
83.....	26	21	22	69	8-0
84.....	26	32	30	88	10-6
85.....	23	21	32	76	8-9
86.....	23	12	26	61	7-5
Standard Score end of Grade 6.....	-	-	-	50	6-9
Grade 7.....	-	-	-	68	7-9
Grade 8.....	-	-	-	76	8-9
Grade 9.....	-	-	-	84	9-9
Median Score, entire class of 86..	30	24	35	90	10-9

Table 3. Raw Scores and Total Grade Scores in by Numbers of the Corrective-Reading Groups on the Reading Vocabulary, Form 2: Form A, November 14, 1937.

Pupil Number (1)	Vocabulary (2)	Sentences (3)	Paragraphs (4)	Total (5)	Grade Score (6)
45	34	24	24	72	8-3
46	25	18	30	73	9-4
47	23	28	32	83	10-0
48	20	20	34	72	9-7
50	24	18	30	72	9-7
51	30	21	34	85	10-1
53	30	22	30	82	9-7
54	30	22	30	81	9-5
57	30	24	26	80	9-4
58	24	19	30	73	8-6
60	28	20	32	77	9-0
62	20	18	32	67	7-6
63	28	18	30	74	8-8
65	28	23	22	73	8-4
67	24	12	20	56	7-2
68	25	24	28	77	9-0
69	21	18	28	68	7-8
70	24	20	22	76	8-3
71	25	19	20	64	7-7
72	23	21	24	68	8-3
73	20	27	32	79	9-4
74	17	22	22	72	8-2
75	21	18	20	64	7-7
76	24	19	20	63	7-6
77	23	18	26	70	8-1
78	20	21	24	74	8-5
80	22	22	20	72	8-2
81	22	0	10	44	6-3
82	24	18	30	66	7-7
83	24	23	22	69	8-0
84	20	22	30	72	8-3
85	22	21	32	76	8-5
86	23	12	20	60	7-6
Standard Score and of Grade 6	–	–	–	50	6-0
Grade 7	–	–	–	68	7-6
Grade 8	–	–	–	76	8-0
Grade 9	–	–	–	84	8-8
Median Score, entire class of 86	20	24	20	66	10-4

a raw score of 50 was equivalent to a grade score of 6^9. The table of age norms gives an age norm of 11-0 for a raw score of 31 and an age norm of 12-1 for a raw score of 50. By comparing the age norms between 11-0 and 12-1 and raw scores between 31 and 50 it was possible to interpolate grade scores for each school month between the grade scores 5^9 and 6^9. In a like manner grade scores between grades 6^9 and 7^9, 7^9 and 8^9, 8^9 and 9^9, 9^9 and 10^9, and 10^9 to 11^9 were interpolated. The complate table is shown in Table 9, page 75.

Studying Individuals in the Corrective-Reading Groups

Further testing of corrective-reading groups.-- As rapidly as possible following the selection of the pupils who were to constitute the corrective-reading groups, members of the groups were interviewed by the writer. During the interview, which required approximately an hour per pupil, the pupil's scores on the tests were discussed and his reading interests were surveyed. Plans for improving his reading ability were discussed, with the aim in mind of securing a proper mind-set toward the corrective-reading program. During the interview the Gray Standardized Oral Reading Paragraphs 1/ were administered, and an informal word-pronunciation test, the vocabulary of which was taken from the Gray passages, was given. (A copy of the word-pronunciation test is shown in Appendix B, page 119.)

The use of Gray's Paragraphs and the informal word-pronuncia-

1/ Published by Public School Publishing Company, Bloomington, Illinois.

a raw score of 50 was equivalent to a grade score of 6^9. The table of age norms gives an age norm of 11-0 for a raw score of 51 and an age norm of 12-1 for a raw score of 50. By comparing the age norms between 11-0 and 12-1 and raw scores between 51 and 50 it was possible to interpolate grade scores for each school month between the grade scores 6^9 and 8^2. In a like manner grade scores between grades 6^9 and 7^9, 7^9 and 8^9, 8^9 and 9^9, 9^9 and 10^9, and 10^9 to 11^9 were interpolated. The complete table is shown in Table 9, page 72.

Studying Individuals in the Corrective-Reading Groups

Further testing of corrective-reading groups.-- As rapidly as possible following the selection of the pupils who were to participate the corrective-reading groups, members of the groups were interviewed by the writer. During the interview, which required approximately an hour per pupil, the pupil's scores on the tests were discussed and his reading interests were surveyed. Plans for improving his reading ability were discussed, with the aim in mind of securing a proper mind-set toward the corrective-reading program. During the interview the Gray Standardized Oral Reading Paragraphs [1] were administered, and an informal word-pronunciation test, the vocabulary of which was taken from the Gray passages, was given. (A copy of the word-pronunciation test is shown in Appendix B, page 110.)

[1] The use of Gray's Paragraphs and the informal word-pronunciation test published by Public School Publishing Company, Bloomington, Illinois.

tion test yielded some information on the methods used by the pupil in attacking the pronunciation of unfamiliar words and on his ability in using these methods, as well as information on his oral-reading ability. The information thus gleaned regarding ability to use phonic elements was of value in planning instruction in word pronunciation and use of the dictionary. Poor oral readers were requested to practice oral reading at home, but no other provision was made to improve oral reading, excepting such as would normally be encountered in the English classes. This was partly due to the lack of time for much individual work and partly due to a desire to give no undue emphasis to oral reading because of the slow silent-reading rates possessed by such a large proportion of the corrective groups.

The word-discrimination test (see Appendix B, page 115.) was adapted from one originally prepared by Jeanette Speiden and used in the Washington Experiment in Character Education, as reported by Monroe and Backus.[1] This test was designed to detect such errors as sounds added or omitted, discrimination of vowels, discrimination of consonants, and reversals of the letter sounds in entire words, syllables or letter groups. This test failed to yield much helpful information, unless it was helpful to know that members of these corrective-reading groups did not make that type of errors, since with possibly two exceptions pupils made so few errors that they were not significant. Table 4 shows the number of errors of each

1/ Marion Munroe and Bertie Backus, Remedial Reading: A Monograph in Character Education. Houghton Mifflin Company, Boston, 1937. p. 115-18.

tion test yielded some information on the methods used by the pupils in attacking the pronunciation of unfamiliar words and on the ability in using these methods, as well as information on their oral-reading ability. The information thus gleaned regarding ability to use phonic elements was of value in planning instruction in word pronunciation and use of the dictionary. Poor oral readers were requested to practice oral reading at home, but no other provision was made to improve oral reading, excepting such as would normally be encountered in the English classes. This was partly due to the lack of time for much individual work and partly due to a desire to give no undue emphasis to oral reading because of the slow silent-reading rates possessed by such a large proportion of the corrective groups.

The word-discrimination test (see Appendix d, page 12.) was adapted from one originally prepared by Jeanette Eveston and used in the Washington Experiment in Observer Education, as reported by Monroe and Sealoo.[1] This test was designed to detect such errors as sounds added or omitted, discrimination of vowels, discrimination of consonants, and reversals of the letter sounds in spoking words, syllables or letter groups. This test failed to yield much helpful information, unless it was helpful to know that members of these corrective-reading groups did not make that type of errors, since with possibly two exceptions pupils made so few errors that they were not significant. Table 4 shows the number of errors of each

1/ Marion Monroe and Bertie Sealoo, Remedial Reading: A Monograph in Character Education. Houghton Mifflin Company, Boston, 1927. p. 11-12.

Table 4. Number of Errors of Each Type Made by Each Pupil in the Corrective-Reading Groups on the Word-Discrimination Test.

Pupil Number	Discrimination of Vowels	Discrimination of Consonants	Reversals	Sounds Added or Omitted	Total
(1)	(2)	(3)	(4)	(5)	(6)
45.....	0	1	0	0	1
46.....	0	1	0	0	1
48.....	0	1	0	1	2
49.....	1	0	0	1	2
50.....	0	1	1	1	3
51.....	0	0	0	3	3
53.....	0	2	0	1	3
54.....	0	1	1	1	3
55.....	1	0	1	0	2
58.....	0	0	0	1	1
60.....	0	1	1	5	7
62.....	0	3	0	2	5
65.....	0	0	0	1	1
66.....	0	1	0	1	2
67.....	0	1	0	3	4
68.....	0	2	1	1	4
69.....	1	0	0	2	3
70.....	1	0	0	1	2
71.....	1	1	1	0	3
72.....	0	2	0	0	2
73.....	0	1	0	1	2
74.....	1	1	0	1	3
75.....	0	1	1	2	4
76.....	0	1	1	2	4
77.....	0	1	0	1	2
78.....	0	1	0	2	3
80.....	1	1	0	0	2
81.....	0	1	0	0	1
82.....	0	1	2	1	4
83.....	2	2	1	8	13
84.....	1	0	0	1	2
85.....	0	3	1	1	5
86.....	1	0	0	1	2
Mean.....	0.4	1.0	0.4	1.5	3.06

Table 6. Number of Errors of Each Type Made by Each Pupil in the Corrective-Reading Groups on the Word-Discrimination Test.

Pupil Number (1)	Misrelation of Vowels (2)	Discrimination of Consonants (3)	Reversals (4)	Sounds Added or Omitted (5)	Total (6)
45.....	0	1	0	0	1
46.....	0	1	0	0	1
48.....	0	1	0	1	2
49.....	1	0	0	1	2
50.....	0	1	1	1	3
51.....	0	0	0	3	3
53.....	0	2	0	1	3
54.....	0	1	1	1	3
55.....	1	0	1	0	2
56.....	0	0	0	1	1
60.....	0	1	1	5	7
62.....	0	2	0	3	5
63.....	1	0	0	1	1
65.....	0	1	0	1	2
67.....	0	1	0	3	4
68.....	0	2	1	1	4
69.....	1	0	0	2	3
70.....	1	0	0	1	2
71.....	1	1	1	0	3
72.....	0	2	0	0	2
73.....	0	1	0	1	2
74.....	1	1	0	1	3
75.....	0	1	1	2	4
76.....	0	1	1	2	4
77.....	0	1	0	1	2
78.....	0	1	0	2	3
80.....	1	1	0	0	2
81.....	0	1	0	0	1
82.....	0	1	2	1	4
83.....	2	2	1	8	13
84.....	1	0	0	1	2
85.....	0	2	1	1	3
86.....	1	0	0	1	2
Mean.....	0.4	1.0	0.2	1.5	3.00

type made by each pupil on this test. On the "Sounds Added or Omitted" section, one pupil (no. 83) made eight errors and another (no. 60) made five errors on 20 responses, a number large enough to be significant of faulty reading of customary reading material. It was hoped that the instruction planned to improve power of word recognition and word pronunciation would help the two pupils who apparently were weak in this phase of associating sound with printed symbols. The mean number of errors made by the groups is shown for each part of the test at the foot of Table 4. It is interesting to note that while an average of only three incorrect responses per pupil was made on the 100 responses of the test, (column 6, Table 4), no single pupil escaped making at least one error. Undoubtedly carelessness and misunderstanding the words as pronounced by the teacher were big factors in distributing these errors so widely.

The survey of the pupil's reading interests included a discussion which was introduced by the question, "Do you like to read?" Chiefly through a question-and-answer procedure the interests of the pupil in various types of reading, the source (home, school library, or public library) of his reading material, the newspapers and magazines which he liked, the number of periodicals and books which were available to him at home and other details of his reading interests were discussed. Besides supplying the interviewer with needed information, this phase of the interview was aimed at helping the pupil to get a better idea of the value of skillful reading and thus at motivating his work in corrective reading.

type made by each pupil on this test. On the "Sounds Lost or Omitted" section, one pupil (No. 82) made eight errors and another (No. 60) made five errors on 30 responses, a number large enough to be significant of faulty reading of unfamiliar reading material. It was hoped that the instruction planned in improve power of word recognition and word pronunciation would help the two pupils who apparently were weak in this phase of associating sound with printed symbols. The mean number of errors made by the groups is shown for each part of the test at the foot of Table 4. It is interesting to note that while an average of only three incorrect responses per pupil was made on the 100 responses of the test, (column 6, Table 4), no single pupil escaped making at least one error. Undoubtedly carelessness and misunderstanding the words as pronounced by the teacher were big factors in distributing these errors so widely.

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During December and January arrangements were made to have the 33 pupils in the corrective groups tested with the Stanford Revision of the Binet-Simon Tests of Intelligence.[1] A kindergarten teacher in the school system of which the high school was a part, who had done a great deal of testing with these tests in kindergarten and first grade work and some testing with older pupils, fortunately had time to test one pupil daily with these tests. It would have been preferable to have used the recently revised tests (Form L or Form M), but due to lack of experience on the part of the teacher with the revised form it seemed best to continue with the older form. However, Form L was used by a graduate student on a number of the pupils in the reading groups, (this was in addition to the use of the older revision with all 33 pupils of the reading groups), with the result that somewhat higher intelligence quotients were secured on Form L than had been the case with the older form. Inquiry brought out the fact that with pupils of adolescent age the older form gave intelligence quotients somewhat lower than Form L and somewhat lower than they probably should be.[2] Binet intelligence quotients for these groups should be interpreted with this fact in mind. It should be noted also that the Terman intelligence quotients in most cases were several points higher than those secured by the older revision of the Binet test.

Table 5 shows the chronological ages of the members of the

1/ Published by Houghton Mifflin Company, Boston, 1922.

2/ Lewis M. Terman and Maud A. Merrill, Measuring Intelligence. Houghton Mifflin Company, Boston, 1937. p. 50-51.

During December and January arrangements were made to have his 22 pupils in the corrective groups tested with the Stanford Revision of the Stanford-Binet Tests of Intelligence.[1] A kindergarten teacher in the school system of which the high school was a part, who had done a great deal of testing with these tests in kindergarten and first grade work and some testing with older pupils, fortunately had time to test one pupil daily with these tests. It would have been preferable to have used the recently revised tests (Form L or Form M), but due to lack of cooperation on the part of the teacher with the revised form it seemed best to continue with the older form. However, Form L was used by a graduate student on a number of the pupils in the reading groups. This was in addition to the use of the older revision with all 22 pupils of the reading groups, with the result that somewhat higher intelligence quotients were secured on Form L than had been the case with the older form. Inquiry brought out the fact that with pupils of equivalent age the older form gave intelligence quotients somewhat lower than Form L and somewhat lower than they probably should be.[2] Since intelligence quotients for these groups should be interpreted with this fact in mind. It should be noted also that the Terman intelligence quotients in most cases were several points higher than those secured by the older revision of the Binet tests.

Table 6 shows the chronological ages of the members of the

[1] Published by Houghton Mifflin Company, Boston, 1932.

[2] Lewis M. Terman and Maud A. Merrill, Measuring Intelligence. Houghton Mifflin Company, Boston, 1937. p. 80-81.

Table 5. Chronological Ages, Binet Mental Ages and Intelligence Quotients, and Terman Mental Ages and Intelligence Quotients of the Individuals in the Corrective-Reading Groups.

Pupil Number	Chronological Age December 1, 1937	Binet Test		Terman Test		Sex
		Mental Age December, 1937	Intelligence Quotient	Mental Age December, 1937	Intelligence Quotient	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
45....	14-4	14-5	101	14-3	99	F
46....	13-7	14-10	109	15-3	112	M
48....	14-11	13-7	91	14-9	99	F
49....	14-0	13-8	98	15-5	110	F
50....	14-3	13-2	92	15-1	106	M
51....	15-2	11-9	78	15-5	102	M
53....	14-9	13-7	92	13-3	90	F
54....	15-7	13-11	89	15-7	100	M
55....	14-5	13-0	90	14-11	103	M
58....	14-11	14-8	98	14-8	98	F
60....	14-11	13-10	93	14-7	98	F
62....	15-7	12-10	82	14-4	92	M
65....	15-10	11-3	71	13-0	82	F
66....	15-4	12-5	81	13-4	87	F
67....	15-1	12-10	85	13-4	88	F
68....	14-2	14-3	101	14-4	101	F
69....	15-3	12-6	82	15-9	103	M
70....	14-8	10-9	73	11-9	80	F
71....	13-8	13-8	100	15-2	111	M
72....	15-2	12-9	84	15-5	102	F
73....	13-11	13-1	94	13-10	99	F
74....	14-3	13-5	94	13-10	97	F
75....	15-3	13-2	87	14-6	95	M
76....	14-4	12-1	84	12-8	88	M
77....	15-2	10-11	72	13-11	92	F
78....	14-5	14-1	98	14-5	100	F
80....	14-1	12-0	85	14-1	100	F
81....	14-10	14-5	97	13-3	89	M
82....	14-6	11-8	81	13-7	94	F
83....	14-4	13-0	90	14-2	99	M
84....	16-7	11-8	72	13-11	87	M
85....	15-11	11-0	69	13-6	85	F
86....	15-4	12-4	80	13-6	88	M
Median	14-10	13-0	87	14-3	98	-

Table 5. Chronological Ages, Binet Mental Ages, and Intelligence quotients, and Terman Mental Ages and Intelligence quotients of the individuals in the Corrective-Reading Group.

Pupil Number	Chronological Age December 1, 1927	Binet Test: Mental Age December, 1927	Binet Test: Intelligence quotient	Terman Test: Mental Age December, 1927	Terman Test: Intelligence quotient
(1)	(2)	(3)	(4)	(5)	(6)
45....	14-4	14-8	103	14-8	99
46....	13-7	14-10	108	13-8	113
47....	14-11	13-7	91	14-2	89
48....	14-0	13-2	96	14-5	110
50....	14-3	13-3	95	13-1	100
51....	13-2	11-8	73	13-5	102
53....	14-0	13-7	98	13-2	90
54....	13-7	13-11	85	13-7	100
55....	14-5	13-0	90	14-11	108
56....	14-11	14-8	95	14-0	98
57....	14-11	13-10	92	14-7	98
62....	13-7	12-10	82	14-4	92
63....	13-10	11-8	71	13-0	92
64....	13-4	12-5	81	13-4	97
67....	13-1	12-10	88	13-4	98
68....	14-2	14-8	101	14-4	101
69....	13-8	12-6	82	13-3	103
70....	14-2	10-9	75	11-9	80
71....	13-3	13-8	100	15-3	111
72....	13-2	12-2	84	13-5	102
73....	13-11	13-1	94	13-10	98
74....	14-2	13-5	94	13-10	97
75....	13-3	11-2	87	14-8	93
76....	14-4	12-1	84	13-3	88
77....	13-2	10-11	72	13-11	93
78....	14-5	14-1	98	14-5	100
80....	14-1	12-0	85	14-1	100
81....	14-10	14-5	97	14-3	99
82....	14-2	11-8	81	13-7	94
83....	14-4	12-0	83	14-3	99
84....	14-7	11-8	72	12-11	87
85....	13-11	11-1	79	13-8	95
86....	13-4	12-4	90	13-8	99
Median	14-10	14-0	87	14-3	97

the corrective-reading groups, the Binet mental ages and intelligence quotients, and the Terman mental ages and intelligence quotients, all as of December, 1937.

School histories.-- The school history of each of the 33 corrective-reading group pupils was briefly surveyed for clues which might help explain the reading deficiency. Factors considered were (1) age of entrance to grade one, (2) first grade entered in the local schools, (3) grades repeated, if any, (4) length of extended periods of absence, if any, and (5) grades in which extended periods of absence occurred. The findings are shown in Table 6.

An item of importance in the facts regarding the school histories of these students is brought out in column 4 (grades repeated). The appearance of the terms "1B", "1A", and "1" in this column is due to the fact that at the time these pupils entered grade 1, the large central elementary school of the town promoted pupils on a semi-annual basis, while in the smaller elementary buildings, annual promotions only were made. It will be noted that over three-fourths of the failures to achieve promotion made by these pupils occurred in grade 1B or grade 1. The rules of this school department permit admission to the first grade in September on a Binet mental age of 5 years and 10 months, or automatic admission to grade 1 in September if the pupil has a chronological age of 6 years; (in the small schools lacking kindergarten facilities the chronological-age requirement is 5 years and 8 months). While the mental ages of these repeaters at the time of admission to grade

the corrective-reading group, the third mental age and intelligence quotients, and the Terman mental age and intelligence quotients, all as of December, 1937.

School Histories.-- The school history of each of the 30 corrective-reading group pupils was briefly surveyed for clues which might help explain the reading deficiency. Factors considered were (1) age of entrance to grade one, (2) first grade entered in the local schools, (3) grades repeated, if any, (4) length of extended periods of absence, if any, and (5) grades in which extended periods of absence occurred. The findings are shown in Table 6.

An item of importance in the tests regarding the school histories of these students is brought out in column 4 (grades repeated). The appearance of the terms "1A", "1A", and "1" in this column is due to the fact that at the time these pupils entered grade 1, the large central elementary school of this town promoted pupils on a semi-annual basis, while in the smaller elementary buildings, annual promotions only were made. It will be noted that over three-fourths of the failure to achieve promotion made by these pupils occurred in grade 1A or grade 1. The rules of this school department permit pupils on to the first grade in September on a first mental age of 5 years and 10 months, or chronologic admission to grade 1 in September if the child has a chronological age of 6 years; (in the small schools lacking kindergartens qualifying the chronological-age requirement is 5 years and 8 months). While the mental ages of these repeaters at the time of admission to grade

Table 6. School Histories of the 33 Individuals in the Corrective-Reading Groups.

Pupil Number	Age on Entering Grade 1	Grade First Entered in the System	Grades Repeated	Length of Periods of Absence Days	Grades in Which Extended Periods of Absence Occurred
(1)	(2)	(3)	(4)	(5)	(6)
45.....	6-1	1	0	0	0
46.....	5-9	1	0	0	0
48.....	-	7	?	?	?
49.....	5-9	1	1	165	1
50.....	-	8	?	?	?
51.....	6-4	1	1B	0	0
53.....	-	7	?	18	7
54.....	5-9	1	1A,2A	40,24	1A,2B
55.....	-	2	2	50	2
58.....	6-1	1	1B	0	0
60.....	-	9	?	?	?
62.....	6-4	1	1,1	80,50,130	1,1,1 (3 yrs.)
65.....	6-7	1	1B,1B	0	0
66.....	5-6	1	1B,2B	25	1A
67.....	6-3	1	1B	0	0
68.....	5-10	1	0	30	4
69.....	6-0	1	1	68,31,18	1,2,6
70.....	6-5	1	0	25,25	4,7
71.....	5-5	1	0	0	0
72.....	5-10	1	1	67,16	1,6
73.....	5-8	1	1B	16,42	3,4
74.....	-	8	?	?	?
75.....	6-0	1	1B,2B	16,14,14 32,19,18	1B,1B,3 4, 6, 8
76.....	-	2	0	0	0
77.....	6-4	1	1B	0	0
78.....	5-7	1	0	16	5
80.....	5-9	1	1	27,21	2,4
81.....	-	9	?	?	?
82.....	6-2	1	0	0	0
83.....	6-1	1	1B	0	0
84.....	6-3	1	1,4	12,19	4,5
85.....	-	4	?	?	?
86.....	6-0	1	2	16,17,19 18,29,27	1,2,3, 4,6,7

Table 8. School Histories of the 55 Individuals in the Corrective-Teaching Groups.

Pupil Number	Age on Entering Grade I	Grade Pupil Entered in the System	Grades Completed	Length of Periods of Absence Days	Grades in Which Extended Periods of Absence Occurred
(1)	(2)	(3)	(4)	(5)	(6)
45.....	8-1	1	0	0	0
46.....	5-9	1	0	0	0
47.....	-	7	7	7	7
48.....	5-9	1	1	166	1
50.....	-	6	7	0	7
51.....	6-4	1	18	0	0
53.....	-	7	7	16	7
54.....	5-2	1	1.,24	40.,24	1A.,28
56.....	-	2	2	80	2
58.....	6-1	1	18	0	0
60.....	-	0	7	7	7
62.....	6-4	1	1.,1	60.,50.,180	3.,1.,1 (3 yrs.)
66.....	6-7	1	1B.,18	0	0
66.....	8-8	1	1H.,28	25	1A
67.....	6-3	1	18	0	0
68.....	5-10	1	0	20	4
69.....	4-0	1	1	66.,81.,15	1.,2.,6
70.....	6-5	1	0	28.,28	4.,7
71.....	8-6	1	0	0	0
72.....	8-10	1	1	87.,16	1.,6
73.....	6-8	1	18	16.,12	3.,4
74.....	-	8	7	7	7
75.....	6-0	1	1H.,28	1H.,14.,14 8H.,13.,12	1B.,1H.,2 5.,8.,8
76.....	-	2	0	0	0
77.....	6-4	1	18	0	0
78.....	5-7	1	0	10	2
80.....	6-9	1	1	27.,21	2.,4
81.....	-	8	7	7	7
82.....	6-2	1	0	0	0
83.....	8-1	1	18	0	0
84.....	6-5	1	1.,6	12.,19	4.,6
85.....	-	4	7	7	7
86.....	6-0	1	6	14.,17.,15 18.,29.,27	1.,5.,6. 4.,5.,7

one are not on record, it is safe to assume, after checking their intelligence quotients, that for the most part they were marking time during their first year or half-year in grade one, waiting for their mental ages to mature sufficiently to enable them to learn to read under the conditions of group instruction. Who knows what unfavorable attitudes towards reading were implanted during these months of failure while waiting to become old enough to learn to read?

Health status.-- The school nurse was consulted regarding the health status of the 33 pupils in the corrective-reading groups. Inquiry was made under the three headings of vision, hearing and general health. The Snellen Charts were first used to test vision, and it was found that all showing defective vision according to this test had received the attention of an eye specialist. One child (number 82) is totally blind in the right eye but has normal vision in the left eye. Three (numbers 50, 68, and 80) wear glasses. To secure a more discriminating test, the Eames 1/ Eye Test for School Children was used, the examination being conducted by the school nurse. As a result of this test, 20 pupils, through their parents, were requested to have an opthalmological examination.

The hearing, tested annually by the school nurse by the "whisper" method and once in three years by the audiometer, was reported by the nurse as normal in all 33 cases.

General health was rated as very good, good, fairly good, or

1/ See Thomas Harrison Eames, "Improvement in School Eye Testing", Education (September, 1935) 56: 14-17.

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Health status.-- The school nurse was consulted regarding the health status of the 23 pupils in the corrective-reading group. Inquiry was made under the three headings of vision, hearing and general health. The English Charts were first used to test vision, and it was found that all showing defective vision according to this test had received the attention of an eye specialist. One child (number 82) is totally blind in the right eye but has normal vision in the left eye. Three (numbers 39, 53, and 80) wear glasses. To secure a more discriminating test, the Snellen [1] Eye Test for School Children was used, the examination being conducted by the school nurse. As a result of this test, 20 pupils, through their parents, were requested to have an ophthalmological examination.

The hearing, tested annually by the school nurse by the "whisper" method and once in three years by the audiometer, was reported by the nurse as normal in all 23 cases.

General health was rated as very good, good, fairly good, or

[1] See Thomas Harrison Garrison, "Improvement in School Eye Testing", Education (September, 1930) 50: 14-17.

fair by the school nurse. All but three were rated "very good" or "good". Two were rated "fairly good" (numbers 66 and 72) and one as "fair" (number 78).

Corrective-Reading Activities Employed

Aims of the corrective instruction.-- It has already been pointed out that one of the aims of this study is to test the practicability of attempting to give corrective instruction in reading in the English classes, and it has been suggested that types of corrective-reading instruction which require separate class periods, or specially trained teachers, or both, are at present beyond the reach of most small high schools. A condition of the experiment was that it must not appreciably interfere with the regular English work. Advocates of supervised study have long held to the theory that much time is wasted in pointless class discussions, that better results can be obtained if the activities of the class period are planned so that, unless the class program operates on a schedule of very short periods (40 minutes or less), a part of the period can be used for silent study under supervision, and that a larger part of the period should be spent in developing the functions of the assignment.[1] Plans for this study were based on the assumption that the last few minutes of the English class period could be

1/ See, for example, Harl R. Douglas, Modern Methods in High School Teaching. Houghton Mifflin Company, Boston, 1926. p. 49.

E. Clarke Fontaine, Ways to Better Teaching in the Secondary School. Ginn and Company, Boston, 1928. p. 172-3.

H. L. Miller, Directing Study. Charles Scribners' Sons, New York, 1922. p. 60.

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[2] Charles Southing, Ways to Better Teaching in the Secondary School. Ginn and Company, Boston, 1928. p. 172-3.

[3] J. L. Miller, Directing Study. Charles Scribners' Sons, New York, 1928. p. 40.

taken three or four days each week for use with pupils needing corrective-reading instruction and that the other members of the class--those who were known to be good readers--could work independently without loss to themselves during these final few minutes. It was realized that such a plan called for careful advance preparation of each day's work.

More specific aims of the instruction may be stated as follows:

(a) Improving rate of reading, and training pupils to use discrimination in adjusting rate of reading to the purpose and type of reading to be done. Contributing to this would be the extensive, voluntary reading, practice in reading for comprehension under pressure of time limits, and the hoped for improvement in vocabulary and comprehension resulting from (b) and (c) below. Class discussions following practice were planned to make the pupil more conscious of the possibilities and needs of improving reading rate and of adjusting rate to the purpose at hand.

(b) Improving comprehension through training in ability to get the central idea of a paragraph or selection and in ability to find the supporting details.

(c) Improving vocabulary through training to develop a technique of word attack, training in the use of the dictionary, using useful word lists, and building an extensive reading background.

Three types of activities planned.-- The types of corrective-reading instruction originally planned for the groups included three general types of work,--voluntary reading, class exercises,

and individual instruction. It soon became evident that the English teacher in whose English classes this work was to be carried on would have little opportunity for individual work in reading instruction. It was also decided that the study itself would be more illuminating if it was made strictly a group proposition; hence attempts at individual corrective-reading instruction were eliminated.

The idea of the voluntary-reading activity was in part inspired by the knowledge of the meagre reading experiences of many of these pupils, as discovered in the survey of their reading interests. Many of the pupils in the corrective-reading groups did no reading other than that required by their school work and such casual reading as comic strips and newspaper headlines. To encourage more reading the corrective-reading group members were excused from the more formal "outside reading" requirement of the English classes. This called for reading in each six weeks' ranking period one book of a specified type taken from a list of books of acknowledged literary merit, and either a written or an oral report on the book read. Instead, the corrective-reading pupils were encouraged to read any books which interested them. They were urged to read as many books as they could find time to read, without letting this reading interfere with their other school work. A minimum of one book each two weeks was suggested. The cooperation of the public library was secured and special shelves were filled with books which the librarian felt would be easy enough and have action enough to be interesting reading for them. They were in no way restricted to the contents of these shelves, however. The

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only report on books read which was required was the checking on a card, 5 by 8 inches in size, of the responses which described their reactions to each book read. The form, somewhat reduced in size, is shown in Figure 1, and is adapted from one used by McCallister.[1/] The report form was kept as simple as possible because it was desired not to put anything in the way of developing as favorable an attitude as possible toward reading. The students were told that this reading

Report of Independent Reading

1. Your Name _____ Date _____
2. Author's Name _____
3. Title of book or selection _____
4. Check the statement below which tells where you got the book.
   _At school _At home _From the public library _I borrowed it
5. Check the word or words which tell how much of the book you read.
   __All of it __Part of it
6. Check the statement in each column which gives your opinion of the book.

__One of the best books I ever read	__Too easy
__A good book, I like it	__Too hard
__Not very interesting	__I don't like it
__A little too hard	__Just about right

Figure 1. Blank Used for Reporting Free Reading, (Reduced in Size).

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1/ James M. McCallister, Remedial and Corrective Reading: A Program for the Upper Grades and High School. D. Appleton-Century Company, New York, 1936. p. 167.

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4. Check the statement below which tells where you got the book.
   ___At school ___At home ___From the public library ___I borrowed it
5. Check the word or words which tell how much of the book you read.
   ___All of it ___Part of it
6. Check the statement in each column which gives your opinion of the book.

___One of the best books I ever read	___Too easy
___A good book, I like it	___Too hard
___Not very interesting	___I don't like it
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The quality of the reading material which pupils would read under such circumstances will be of real concern to some.[1] The problem in this study was to get the pupils to read something, hoping that as a result an interest in reading would be aroused, so that eventually their tastes would lead them to a better quality of reading material. Royster [2] expresses some such thought in reporting on a semester of free reading with 120 high-school freshmen in English classes when she says:

> "Many of these books may seem childish and immature, but so are the freshmen who read them. Given a taste for reading, there is hope that the freshman who finds delight in harmless juveniles may in time become a senior with an appreciation of the classics."

For the class exercises, a considerable variety of work was planned. Most of it was found in commercially prepared materials, and the greater part of it consisted of paragraphs to be read for specific purposes. Sources of most of this material were McCall and Crabbs [3] Standard Test Lessons in Reading, Book V; Mack, McCall and Almack's [4] Roads to Reading; and Hovious' [5] Flying the Printways,

1/ See, for example, Lewis M. Terman, and Margaret Lima, Children's Reading: A Guide for Parents and Teachers. D. Appleton and Company, New York, 1926. p. 77-84.

2/ Salibelle Royster, "What High School Freshmen Like to Read", The English Journal (High School Edition, February, 1933) 22: 139.

3/ William A. McCall and Lelah Mae Crabbs, Standard Test Lessons in Reading, Book V. Bureau of Publications, Teachers College, New York, 1932. 94 p.

4/ Reba G. Mack, William A. McCall, and John C. Almack, Roads to Reading. Harcourt, Brace and Company, New York, 1937. vi + 89 p.

5/ Carol Hovious, Flying the Printways. D. C. Heath and Company, New York, 1938. xii + 525 p.

The quality of the reading material which pupils would read under such circumstances will be of real concern to some.[1] The problem is truly strange to get the pupils to read something that as a result an interest in reading would be aroused, so that eventually their tastes would lead them to a better quality of reading material. Soyster[2] expresses some such thought in reporting on a semester of free reading with 180 high-school freshmen in English classes when she says:

> "Many of these books may seem childish and immature, but so are the freshmen who read them. Gives a basis for reading, there is hope that the freshmen who finds delight in Harriet Lummis may in time become a senior with an appreciation of the classics."

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4/ John C. Hook, William A. McGall, and John C. Almack, Books to Read. Newsbount, Press and Company, New York, 1937. vi + 94 p.

5/ Carol Dowlone, Flying the Pinafore. D. C. Heath and Company, New York, 1929. xii + 320 p.

all of which were furnished in quantity sufficient to provide each pupil with a copy during the class period. Some of it was to be read under time pressure, although this was not to be emphasized. Comprehension tests, as prepared by the authors of the books used, were planned.

Planning the Teaching

Organizing the instruction.-- As previously stated, all group corrective-reading work was done in the English classes, by the regular English teacher in the usual English period. Class periods were 52 minutes net in length on Mondays, Tuesdays, and Thursdays, and 44 minutes net in length on Wednesdays and Fridays. The corrective-reading groups, numbering 8, 9, and 16 in the respective divisions, received the same English assignments and did exactly the same work that they would have done if the corrective-reading study had not been conducted. The only exception to that statement was the substitution of extensive voluntary reading for the usual required readings. They met with the other members of their English sections, took part in the same class activities, and were held to the same general standards. The work was so planned that on three or four days each week the general class discussions would be brought to a close about 15 minutes before the end of the class period. The members of the class who were not members of the corrective-reading group would then begin individual silent study or other individual work connected with the English course, while the members of the

all of which were furnished in quantity sufficient to provide each pupil with a copy during the class period. Some of it was to be read under time pressure, although this was not to be emphasized. Comprehension tests, as prepared by the authors of the books used, were planned.

Planning the Teaching

Organizing the instruction.-- As previously stated, all group corrective-reading work was done in the English classes, by the regular English teacher in the usual English period. Class periods were 55 minutes met in length on Monday, Tuesday, and Thursday, and 44 minutes met in length on Wednesday and Friday. The corrective-reading groups, numbering 8, 9, and 10 in the respective divisions, received the same English assignments and did exactly the same work that they would have done if the corrective-reading study had not been undertaken. The only exception to that statement was the substitution of extensive voluntary reading for the usual required reading. They met with the other members of their English sections, took part in the same class activities, and were held to the same general standards. The work was so planned that on three or four days each week the general class discussions would be brought to a close about 10 minutes before the end of the class period. The members of the class who were not members of the corrective-reading group would then begin individual silent study or other individual work connected with the English course, while the members of the

corrective-reading group would engage in some of the corrective-reading activities. The teacher of course gave practically her full attention during this last part of the period to the corrective-reading group. There was no hard and fast rule that the last 15 minutes on a definite number of days per week should be devoted to the corrective reading. At times other activities occasionally encroached on the reading time. This was particularly true of some literature assignments.

Between December 1, 1937 and June 1, 1938, an average of approximately three remedial lessons per week, of about 15 minutes each in length, was conducted. This covered a period of 20 school weeks. When McCall and Crabbs' Standard Test Lessons in Reading was used, the standard procedure as outlined in the teacher's manual for those booklets was followed. Pupils opened the books to the proper page and then closed the books, keeping a finger in the book at the page to be used. At the starting signal, they read the paragraph of the lesson and immediately began to mark what they considered the correct responses to the questions (usually 10 in number) which followed the paragraph. At the end of three minutes, time was called and all work was stopped. The teacher then listed the correct responses on the blackboard, responses were corrected and grade scores made were recorded. Wherever pupils' responses varied from the correct ones, discussion followed. One such exercise would consume about all the time available for corrective reading during a class period. When Mack, McCall and Almak's Roads to Reading was

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used in place of the Standard Test Lessons in Reading, a similar procedure was followed, except that no time limit for reading and marking responses and no grade-score equivalents for scores were used. Pupils seemed relieved not to be required to read under pressure of timing, and they found the selections of the latter book more enjoyable. The vocabulary of Roads to Reading was simpler than that of Book V of Standard Test Lessons in Reading, which may in part explain why the former was enjoyed more by the pupils.

During the later weeks of the study, beginning on March 14, the paragraphs and longer selections used for comprehension drill were taken from Hovious' Flying the Printways. These included exercises for finding the main ideas of paragraphs, exercises for finding the important details, exercises in following directions and exercises in word recognition, word meanings, and using the dictionary. Often several of these could be completed in the time available in one class period. Vocabulary work was emphasized throughout.

Table 7 shows the number and type of exercises used and the sources from which they were taken. Difficulty was occasionally experienced in classifying some of the exercises used in Flying the Printways, and in some instances it was a question as to whether or not a group of paragraphs should be classified as separate exercises or as one exercise. Many exercises involved more than one type of reading, as, for example, following directions and doing dictionary work. All exercises read to measure speed also included

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tests on details of the selection. The table indicates the degree of over-lapping encountered in classifying the exercises used. Exercises varied in length from about 150 words to over 1,800 words.

Table 7. Numbers, Types, and Sources of Paragraphs and Selections Read by Corrective-Reading Groups, December 1, 1937 to June 1, 1938.

Type of Selection; Read for Purpose of:	Source: Standard Test Lessons in Reading Book V McCall Crabbs	Source: Roads to Reading, Mack, McCall Almack	Source: Flying the Printways Hovious	Total	Number of Duplications	Net Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Getting the Main Idea...	0	10	16	26	0	26
Getting the Details.....	12	12	32	56	10	46
Following Directions....	0	6	11	17	1	16
Getting Implied Facts...	0	12	1	13	7	6
Increasing Speed.....	12	0	3	15	15	0
Getting Word Meanings...	0	9	16	25	8	17
Learning How to Pronounce Words.....	0	0	29	29	0	29
Learning How to Use the Dictionary.....	0	0	7	7	3	4
Total.....	24	49	115	188	-	-
Number of Duplications..	12	16	16	44	44	-
Net Total.....	12	33	99	144	-	144

An average of about seven exercises per week was completed, or about two per day for the days available for corrective reading.

Motivating the corrective reading.-- The corrective-reading work was an additional load of school work placed on the shoulders of slow readers. The voluntary reading, judging by the number of

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Table 7. Numbers, Types, and Sources of Paragraphs and Selections Read by Corrective-Reading Groups, December 1, 1927 to June 1, 1928.

Type of Selection: Read for Purpose of:	Source: Standard Test Lessons in Reading Book V McCall McCall Crabbe	Source: Made to Read-ing, Mary Almack	Source: Trying the Trick-ways Novins	Total	Dur-ber of Dup-lica-tions	Net Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Getting the Main Idea...	0	10	16	26	0	26
Getting the Details.....	12	12	32	56	10	46
Following Directions....	0	6	11	17	1	16
Getting Implied Facts...	0	12	1	13	7	6
Increasing Speed.....	12	0	3	15	15	0
Getting Word Meanings...	0	9	16	25	8	17
Learning How to Pro-nounce Words.....	0	0	29	29	0	29
Learning How to Use the Dictionary.....	0	0	7	7	3	4
Total.....	24	49	115	188	-	-
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An average of about seven exercises per week was completed, or about two per day for the days available for corrective reading.

Motivating the corrective reading.-- The corrective-reading work was an additional load of school work placed on the shoulders of slow readers. The voluntary reading, judging by the number of

books read, proved sufficiently interesting to those who did much of it to provide its own reward. The class exercises were easily motivated, at least for a time. Each pupil knew where he stood in relation to the group as a whole on the scores of the standardized-reading tests which were given at the beginning of the study. As a result of class discussions and of the conferences with the writer, each pupil realized the need of improving his reading skills. Furthermore the materials used were attractive to the students,-- so attractive that some members of the English classes not included in the corrective-reading groups asked to be allowed to do the exercises. The pupils were aware that their reading skills would later be measured with another standardized-reading test, and most of them desired to work to improve their scores. The result was that for a considerable part of the period of the experiment the corrective group exercises were entered into with fine spirit. As the months passed and the novelty wore off, some of this enthusiasm waned. Some pupils began to give evidence of being bored by them. But on the whole, it can be fairly stated that the resentment of some of the better readers at not being allowed to participate in the corrective program exceeded any resentment shown by any individuals who were included.

A favorable mind-set toward the corrective work was apparently secured from most of the members of the reading group. A few did very little voluntary reading.

Measuring gains in reading skill.-- In June, 1938, the alternate

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Measuring gains in reading skill.-- In June, 1939, the alternate

forms of the Traxler Silent Reading Test and the Haggerty Reading Examination, Sigma 3, were given to the entire membership of the ninth-grade class, the former on June 1 and the latter on June 7. Increases in the test scores were assumed to indicate growth in reading skills. The two forms of the Traxler test were published as equivalent forms and hence raw scores were directly comparable. The two forms of the Haggerty test were not equivalent forms, to the extent that a given raw total score on Form A represented a different grade score than the same raw score on Form B. It was therefore necessary to translate by interpolation the raw total scores on Form B into grade scores, in the same manner as raw scores on Form A were computed into grade scores. (See page 13, also Table 9, page 75.) It was hoped that the grade scores thus obtained would be directly comparable, but this did not prove to be the case.

While improvement in reading skills can be measured, we have no objective method of determining improvement in attitude toward reading or in appreciation of what is read. These gains probably are of more value to the individual than the gains in measurable skills.

A presentation of the results of the June tests and of gains made in reading skills will be made in Chapter IV. Before these results are discussed, however, a brief survey of the procedures and results of other studies will be presented. The development of reading needs in relation to changes in American life will be briefly surveyed, and the emergence of remedial and corrective reading as

forms of the Iowa Silent Reading Test and the Haggerty Reading Examination, Form E, were given to the entire membership of the ninth-grade class, the former on June 1 and the latter on June 7. Increases in the test scores were assumed to indicate growth in reading ability. The six forms of the Iowa test were published as equivalent forms and hence raw scores were directly comparable. The two forms of the Haggerty test were not equivalent forms, to the extent that a given raw total score on Form A represented a different grade score than the same raw score on Form E. It was therefore necessary to translate by interpolation the raw total scores on Form E into grade scores, in the same manner as raw scores on Form A were computed into grade scores. (See page 13, also Table 3, page 75.) It was hoped that the grade scores thus obtained would be directly comparable, but this did not prove to be the case.

While improvement in reading ability can be measured, we have no objective method of determining improvement in attitude toward reading or in appreciation of what is read. These gains probably are of more value to the individual than the gains in measurable ability.

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a problem of the present-day high school will be traced.

CHAPTER III

A SUMMARY OF STUDIES OF REMEDIAL AND CORRECTIVE READING AT THE SECONDARY-SCHOOL LEVEL

Changing Conditions and the Reading Problem

Changes in instructional methods in reading.-- A century ago the great majority of literate individuals would probably have been classed as remedial- or corrective-reading cases according to present day standards. Little was then known about the basic principles of teaching reading which are commonly used today. The New England Primer had been superseded by Noah Webster's The American Spelling Book, as the popular basal reader, and this book in turn was followed by such books as The North American Reader, the Hillard Readers, and others. Learning the alphabet was the first step in learning to read, followed by an analysis of the sounds of the letters and letter combinations. Several years were ordinarily used in mastering the basal book. Good oral reading and elocutionary ability were the desired results.

Such cumbersome methods of learning to read, however, were not far out of line with the reading needs of the day. Books, magazines, and newspapers were scarce. Few individuals received more than a common school education. Opportunities for extensive reading were limited, and the occasions when reading was necessary were com-

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paratively few.

About 1880, according to Nila B. Smith,[1] a period of emphasis upon reading as a cultural asset began to make itself felt in the field of reading instruction. According to her:

> "This movement was the result of an emphasis upon the use of reading as a medium for awakening a permanent interest in literary materials which would be a cultural asset to the individual in adult life .... This emphasis steadily gained in strength and persisted until about 1918."

Oral reading was, however, still uppermost, and silent-reading techniques, as we understand them today, were only just beginning to emerge at the close of this period. The use of supplemental reading material became common, primarily for the purpose of developing a love for good reading and the power of sustained interest,--two achievements which the basal readers, because of emphasis on drill and good oral reading, could not produce. This period was characterized also by a replacement of the word method with the "sentence" method, and by elaborate phonetic methods. The latter emphasis resulted, according to Smith,[2] in an inability on the part of many pupils to read well in the upper grades, because it had developed a dependency on the teacher in using the phonetic system. While it must be remembered that this was an oral-reading weakness, perhaps we have in this instance an early example of "corrective" reading deficiencies.

Following the close of the World War, a new and radical em-

1/ Nila Banton Smith, American Reading Instruction. Silver, Burdett and Company, New York, 1934. p. 115.

2/ Op. cit., p. 130.

phasis in reading instruction appeared. Oral reading had held the spotlight from early days, but for a short time following 1918 it went into oblivion and silent reading came into its own. Until about 1925 silent-reading techniques received almost exclusive emphasis in methods of teaching the subject. The necessity of doing more reading than in the past had been forced on collective society by the mass of reading materials which surround the individual. Reading silently for meaning became the by-word, and silent-reading techniques were the order of the day. The superiority of silent reading over reading aloud both in speed and in comprehension was demonstrated through scientific investigation. The development of comprehension became a major concern, and speed was also stressed. Individual differences were more easily measured than was the case with elocutionary reading, and ability grouping began to be practiced.[1] Near the end of this period,--about 1925--frequent articles on remedial and corrective reading began to appear in the professional literature, due primarily to the fact that the testing movement had acquired considerable momentum and had brought to light the enormous differences existing in the reading abilities of different children.

In 1925 the report of the National Committee on Reading[2] appeared in the Twenty-Fourth Yearbook of the National Society for the Study of Education. This report gave emphasis to objectives

1/ Smith, op. cit., p. 183.

2/ National Society for the Study of Education. Report of the National Committee on Reading. The Twenty-Fourth Yearbook, Part I. Public School Publishing Company, Bloomington, Illinois, 1925. 256 p.

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2/ National Society for the Study of Education. Report of the National Committee on Reading. The Twenty-fourth Yearbook, Part I. Public School Publishing Company, Bloomington, Illinois, 1926. 349 p.

of reading instruction which are much broader than those of the period just described. These major objectives are stated as follows:[1]

1. Rich and varied experience through reading.
2. Strong motives for, and permanent interests in, reading.
3. Desirable attitudes and economical and effective habits and skills.

The number of supplementary readers has greatly increased, and the vocabulary load has been more carefully controlled. Phonic instruction has been considerably simplified. Oral reading is receiving a sane but minor recognition. A more scientific attitude is discernible in the classifying of children into groups on the basis of ability and particularly in adapting work to the varying abilities of individuals within the group. Recognition of the need of corrective work with small groups and of remedial instruction for problem cases has developed.

Changes in the secondary school population.-- While it may be that many of the literate individuals of a century ago would have been corrective-reading cases if they could have been judged by present standards of reading ability, it is quite likely that there were proportionally fewer problem cases among them, from the school standpoint, than is the case today. A very large proportion of the population of that time failed to reach a level in school corresponding to our junior high-school grades. Today nearly all pupils

1/ National Society for the Study of Education, op. cit., p. 9-19.

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1. Rich and varied experiences through reading.
2. Strong motives for, and permanent interests in, reading.
3. Desirable attitudes and economical and effective habits and skills.

The number of supplementary readers has greatly increased, and the vocabulary load has been more carefully controlled. Phonic instruction has been considerably simplified. Oral reading is receiving a new but minor recognition. A more scientific attitude is discernible in the classifying of children into groups on the basis of ability and particularly in adapting work to the varying abilities of individuals within the group. Recognition of the need of corrective work with small groups and of remedial instruction for problem cases has developed.

Changes in the secondary school population.-- While it may be that many of the literate individuals of a century ago would have been corrective-reading cases if they could have been judged by present standards of reading ability, it is quite likely that there were proportionately fewer problem cases among them, from the school standpoint, than is the case today. A very large proportion of the population of that time failed to reach a level in school corresponding to our junior high-school grades. Today nearly all pupils

[1] National Society for the Study of Education, op. cit., p. 9-12.

attend junior high school or equivalent grades, and an increasing proportion continues into high school. Nearly all children up to 16 years of age are now in school.

When only the fittest, academically speaking, remained in school long enough to enter the secondary school, few reading problems developed. Today a vastly different situation faces the schools. Thomas [1] calls attention to conditions in New York City.

> "A recently published monograph by Stella Center and Gladys Persons, teachers of English in the Theodore Roosevelt High School in New York City, contains some disturbing figures. Scores on standardized tests taken by all ninth grade students entering the Theodore Roosevelt High School between the years 1934 and 1936, show that 25.5 per cent entered with a reading ability of sixth grade level or below. Only 35.4 per cent entered with a reading ability equal to or above ninth grade level. Little comfort will be found in the fact that the population of the school is a mixed foreign one. Such heterogeneous populations are found in large and small schools the country over. Experienced teachers will agree that the distressing situation revealed by the New York City study is not restricted to that city alone."

Gray, [2] in an address before the American Council on Education, made the following interesting statement on the extent of reading disability among ninth-grade students in another section of the country:

> "In a study made in the Chicago suburban area involving almost six thousand ninth grade pupils, it was found that about 4 per cent attained scores usually made by second and third grade pupils, 5 per cent by fourth grade pupils, 6 per cent by fifth grade pupils, and 7 per cent by sixth grade pupils. In all, 22 per cent ranked below a grade score of seven, which has been shown experimentally to be the min-

1/ Russell Thomas, "The Problem of Reading in High Schools". The Harvard Educational Review (October, 1937) 7: 434.

2/ William S. Gray, "Nature and Extent of the Reading Problem in American Education". Educational Record (January, 1938) 19: sup. 90.

attend junior high school or equivalent grades, and an increasing proportion continues into high school. Nearly all children up to 15 years of age are now in school.

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1/ Russell Thomas, "The Problem of Reading in High Schools". The Harvard Educational Review (October, 1937) V: 492.

2/ William S. Gray, "Nature and Extent of the Reading Problem in American Education". Educational Digest (January, 1938) 18: sup. 90.

imum level of reading achievement at which pupils are able to read with reasonable ease and comprehension the materials usually assigned to high schools."

Changes in methods of teaching other subjects.-- The present tendency to substitute extensive for intensive reading in many subject fields, and its relation to reading problems in the high school is well stated by Kelley [1] as follows:

> "The non-academic student who does not care to read, and who reads ineffectively, is coming into the high school in increasing numbers. At the same time, one of the most important of the modern advances in teaching methods is the tendency to force both elementary and high school students to read widely in many fields. A few years ago it was enough for the high school student to read and master the contents of a single textbook in a class. Now, instead of confining the student's reading to the single text relating to a limited number of topics, the progressive school provides for and demands a wide range of reading activity.
>
> "Furthermore, the solution of most classroom problems in the modern school requires the skillful use of books as sources of information."

Other sources could be quoted, if necessary, to show that not only are many poor readers coming into the high schools, but that also much more reading is being required than in former years. Gray [2] mentions the steady "upgrading" of requirements in the secondary school grades, and the enrichment of courses of study, as other factors in bringing to the surface reading deficiencies.

Changes in standards of promotion.-- Gray [3] calls attention to

1/ Victor H. Kelley, "Reading as a Problem for the High School". The Clearing House (April, 1937) 11: 487.

2/ Op. cit., p. 90.

3/ Op. cit., p. 90.

the part played by new standards of promotion in increasing the numbers of remedial- and corrective-reading cases in the secondary schools. He mentions specifically the standards of promotion which are based on total achievement rather than on excellence in a particular subject, such as reading, and the wider provisions for individual needs.

Promotions because of chronological age or for the pupil's social development and adjustment are frequently practiced.[1/] Provisions for individual differences in many schools are so carefully worked out that mal-adjusted pupils are passed on with the intention that the next grade will take them as they come and adapt the work to them. While such promotions are undoubtedly best for the individual, it is obvious that they frequently may result in piling up the number of cases of poor readers in the upper grades and high school.

The seriousness of the problem.-- In discussing maladjustments due to failure in reading, Gates [2/] says:

> "Failure to learn to read may be as serious a catastrophe in the life of a child as marital or financial failure or other major catastrophes in the life of an adult. The young child, moreover, is less capable of making satisfactory 'mental adjustments' when such failure occurs. Study of the histories of disabilities in reading gives evidence that persisting personality and conduct mal-adjustments of a very serious character are the frequent results of failure or marked backwardness in reading."

1/ See Department of Superintendence, Five Unifying Factors in American Education, Ninth Yearbook. Department of Superintendence, National Education Association, Washington, 1931. p. 48-9.

2/ Arthur I. Gates, "Mal-Adjustments Due to Failure in Reading", The School Executive (June, 1936) 55: 379.

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2/ Arthur I. Gates, "Maladjustments Due to Failure in Reading", The School Executive (June, 1936) 55: 574.

He mentions such mal-adjustments as nervous tension, putting up a bold front, retreat reactions, withdrawing reactions, extreme self-consciousness, give-up or submissive adjustments, and in a few cases constructive, compensatory reactions, as special talent in drawing.

Studies of the relation of reading to achievement in school show the necessity of a reasonable degree of reading ability if the child is to make anything like satisfactory progress. Gray,[1] in the address before the American Council on Education previously referred to, stated that:

> "It has been shown experimentally, for example, that pupils in the middle grades who rank much below a grade score of four in reading are in most cases unable to engage successfully in the reading activities usually required; likewise, pupils who rank distinctly below a grade score of seven are unable as a rule to interpret intelligently the reading materials normally used in four year high schools."

The demands of society outside the school, and the requirements of the curriculum within the school, exact a much greater amount of reading than was the case in the not far distant past. In the schools, particularly, the kind of reading which the pupil must do requires a greater degree of reading skill than ever before. Add to these facts the fact that the amount of elimination from high school is much smaller than even a decade ago, resulting in keeping in school the poor student as well as the able one, and it is easy to understand why the corrective- and remedial-reading problem is demanding so much attention.

1/ William S. Gray, op. cit., p. 93.

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[1] William S. Gray, op. cit., p. 92.

Gates' Studies

Importance of Gates' researches.-- Doctor Arthur I. Gates and his associates at Teachers College, Columbia University, have been studying reading problems for two decades, and have made some extremely significant contributions to the problems concerned with diagnosing and correcting reading deficiencies. In addition to numerous magazine articles and other books, Gates [1] has published a volume which has probably had as much to do with the development of a consciousness of the existance of reading differences in individuals and of reading deficiencies in many of them as any work yet available. The first edition of this book was based on studies conducted prior to December, 1926, and was published in June, 1927. The revised edition, published in 1936, shows the influence of the author's continued study and includes many new tests and more and presumably better material on remedial instruction.

In the revised edition of The Improvement of Reading, Gates devotes about 40 pages to a discussion of the general characteristics of the diagnostic program and of remedial instruction. The next hundred pages are used in discussing diagnosis in grades three to eight by means of a team of group tests, and in discussing remedial instruction in reading in those grades. Later sections of the book are devoted to a discussion of diagnostic and remedial procedures

1/ Arthur I. Gates, The Improvement of Reading. The Macmillan Company, New York, 1927. xii + 440 p. Also revised edition, 1936. xvi + 688 p.

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1. Arthur I. Gates, The Improvement of Reading. The Macmillan Company, New York, 1927. xii + 420 p. Also revised edition, 1935. xvi + 588 p.

in grades one and two. The final sections consider supplementary diagnoses of individuals who are extreme reading-disability cases and remedial instruction for such cases.

Gates' teams of group tests.-- Gates [1] states that he has endeavored "to develop a program in which the most important reading skills from the point of view of diagnosis are tested first. Pupils found to be satisfactory in these abilities need not be examined further." Reading, he says, is not a single ability, but a number of specific abilities. He believes that general reading skill can not be measured and that even if it could, such measurement would produce little knowledge of strength and weakness in particular types of reading. He concludes, as a result of his research, that a battery of four tests will indicate particular strengths and weaknesses in intermediate and upper-grade reading sufficiently well for practical purposes. All four measure speed and accuracy of reading relatively easy material; none of them measures depth or power of comprehension.

The four types of tests are:

Type A. Reading to Appreciate the General Significance of a Paragraph.

Type B. Reading to Predict the Outcome of Given Events.

Type C. Reading to Understand Precise Directions.

Type D. Reading to Note Details.

1/ Arthur I. Gates, The Improvement of Reading, Revised Edition. The Macmillan Company, New York, 1936. p. 40.

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IV Arthur I. Gates, The Improvement of Reading, Revised Edition. The Macmillan Company, New York, 1935. p. 40.

"The four tests were selected so as to give representation to four important and more or less distinctive reading skills, to include reading both for general impressions and for exact details, to give play to different rates of reading (since the rate satisfactory for A is, for the typical grade pupil, too rapid for C) and different degrees of ease of perfect comprehension, and thus to make possible a diagnosis of strengths and weaknesses in important reading skills that could not be secured by a single test of any type."[1]

A fifth test, known as The Modern School Test of Level or Power of Comprehension [2] has been developed by Gates for use in certain cases where it is desirable to supplement the team of tests with a test to measure depth or power of comprehension. Speed of reading is not a factor in the scores obtained on this test. Gates claims that rate and accuracy of comprehension depend largely upon specific reading techniques for whose development the classroom teacher is responsible, while power or depth of comprehension depends to a great extent upon general intelligence, range and richness of general experience, and variety of reading experience. Hence the latter is an ability in which improvement due to specific teaching efforts is likely to be slow, and will be best assisted through developing accuracy and speed in what is read.

Scores made on the team of tests for grades three to eight may be interpreted as age or grade scores, and on the basis of percentage of accuracy. The total number of paragraphs read correctly can be translated into grade scores and a reading grade score for the individual can be secured by averaging the grade scores on the four

1/ Gates, op. cit., p. 52.

2/ All of the Gates tests referred to are published by the Bureau of Publications, Teachers College, Columbia University, New York, N.Y.

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Scores made on the term of tests for grades zero to eight may be interpreted as age or grade scores, and on the basis of percentage of accuracy. The total number of paragraphs read correctly can be translated into grade scores and a reading grade score for the individual can be secured by averaging the grade scores on the four

1/ Gates, op. cit., p. 32.

2/ All of the Gates tests referred to are published by the Bureau of Publications, Teachers College, Columbia University, New York, N.Y.

tests. Such a reading grade score should be used with an understanding of what it is,--an average of the grade scores obtained in four different types of reading. Grade scores based on number of paragraphs read correctly are given up to grade 11.5, thus making the use of this team of tests practical with slow ninth grade pupils.

Group and individual appraisal.-- Group diagnosis for use in checking up the results of teaching and in changing places of emphasis in teaching is suggested by Gates [1] as one value which can result from the use of the team of tests. Such information can be applied by any teacher who is teaching reading, regardless of the size of the groups. The status of the group in average achievement in each of the four types of reading is demonstrated. In a recent survey made by the present writer with Gates' team of tests, it was found that in general the pupils in grades three to six inclusive had developed most satisfactory skills in reading to get the main idea of a selection (Test A), and in reading to predict the outcome of given events (Test B), but that results were less satisfactory in reading to get the details of a selection (Test C), and in reading to carry out precise directions (Test D). To correct weaknesses discovered through Test C it was decided to use the McCall-Crabbs [2] Standard Test Lessons in Reading for drill in reading to get the details, using three exercises weekly. No especial attempt was made to correct the apparent weakness in ability to follow precise directions, except

1/ Op. cit., p. 57.

2/ William A. McCall and Lelah Mae Crabbs, Standard Test Lessons in Reading, Books II to V inclusive. Bureau of Publications, Teachers College, Columbia University, New York, 1926. 94 p. each.

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[1] Op. cit., p. 87.

[2] William S. Odell and Lelah Mae Orabbe, Standard Test Lessons in Reading, Books II to V inclusive. Bureau of Publications, Teachers College, Columbia University, New York, 1923. 64 p. each.

such instruction as would normally have been given even if the tests had not been used. After about six months the alternate form of the Gates tests was given. Normal gains in reading to get the main idea and to predict the outcome of given events were secured, and large gains in the other two types of reading resulted. In this case a relationship in skills needed for reading to get the details and in reading to follow precise directions was indicated. The point to make in this instance, however, is the fact that the tests disclosed a group weakness, and that the group responded to specific treatment for the weakness.

Probably the appraisal of individuals in the group made possible by this team of tests is even more important than group appraisal. A great variety of weaknesses and combinations of weaknesses are disclosed in individuals,--weaknesses in rate of reading, in accuracy of comprehension, and in total amount read correctly, in each of the four types of reading. Even in groups showing superior attainments as a whole, individuals will often be found who are in serious need of special help.

These tests are simple to administer and simple to interpret and can be used by the average classroom teacher successfully. Gates [1/] and an associate have prepared a series of booklets containing remedial exercises for the various types of deficiencies discovered by the team of tests. Three booklets, each on a different level of

1/ Arthur I. Gates, and C. C. Peardon, The Gates-Peardon Practice Exercises. Bureau of Publications, Teachers College, Columbia University, New York, 1933. 62 p. Books III, IV, and V in each of the four types of reading tested by the Gates tests.

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difficulty, have been prepared for each of the four types of reading tested. The administration of the team of four tests early in the school year, a study and classification of results, a diagnosis of group weaknesses and of individual deficiencies, the use of the proper exercises of the Gates-Peardon series for corrective and remedial work with the group where needed and in any case with individual pupils, and a check-up of results with an alternate form of the team of tests late in the school year, constitute a program of diagnostic and remedial work simple enough for use by any classroom teacher in grades three to eight. While the program was planned by Doctor Gates for grades three to eight inclusive, any corrective-reading cases in grade nine could be measured by the tests and would undoubtedly find the practice exercises adapted to their needs. Gates' book, The Improvement of Reading, really constitutes an elaborate, detailed manual for carrying through such a program. In the last part of his book he outlines tests and procedures for diagnostic and remedial work with cases of extreme reading disability; this section will not be reviewed here, as extreme remedial cases are outside the scope of the present study.

Durrell's Studies

The Durrell-Sullivan tests.-- Durrell and his associates at the School of Education, Boston University, have made some significant contributions to the field of diagnosing reading difficulties and administering remedial and corrective instruction. Their work to

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date has perhaps been more closely related to the first six grades than has that of Gates, and to that extent has less bearing on the present study.

Durrell and Sullivan [1] have prepared a series of tests for measuring reading capacity and reading achievement. The intermediate tests were prepared specifically for use in grades three to six inclusive, while an advanced form for grades seven to nine inclusive is in preparation. Another test, prepared by the senior author [2] of the other two tests, gives a detailed analysis of the remedial needs in cases of severe reading deficiencies.

Durrell and Sullivan [3] introduce a new note into the problem of reading deficiencies by assuming in their tests .... "that serious reading disabilities can be discovered by revealing discrepancies between the child's understanding of spoken language and his understanding of the printed word." By using the capacity and achievement tests together, it can be determined, according to the claims of the authors, whether or not the child can understand the written word as well as he can the spoken language, whether or not the child's difficulty is chiefly one of vocabulary or of longer units,

1/ Donald D. Durrell and Helen Blair Sullivan, Reading Capacity and Achievement Tests. World Book Company, Yonkers-on-Hudson, New York, 1937. Manual, 12 p. Reading Capacity Test booklet, Reading Achievement Test booklet, keys and scoring sheets.

2/ Donald D. Durrell, Analysis of Reading Difficulty. World Book Company, Yonkers-on-Hudson, New York, 1937.

3/ Donald D. Durrell and Helen Blair Sullivan. Manual for Intermediate Tests, Reading Capacity and Achievement Tests. World Book Company, Yonkers-on-Hudson, New York, 1937. p. 1.

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in what particular type of reading--as understanding sentences, understanding words in context, getting the details, getting the central thought, or locating specific information--the child shows special disability, whether or not the child has difficulty in spelling, and whether or not he can make a good written summary of what he has read without repeatedly referring back to the text.

Description of the tests.-- The reading capacity test requires no reading by the child. The vocabulary sub-test requires the child to find pictures illustrating the words pronounced by the examiner. The paragraph sub-test, consisting of twelve paragraphs graded in difficulty, has a group of pictures for each paragraph, the child indicating his responses to the questions asked after the paragraph is read to him by the examiner, by marking the number of the correct picture.

The reading achievement test consists of four sub-tests: (1) word meaning, (2) paragraph meaning, (3) spelling, and (4) written recall. The last two sub-tests are made optional in the use of the test.

The two tests were prepared for use together. They were standardized on the same groups of children and under exactly the same conditions. The authors feel that a serious reading deficiency exists when a child has a reading capacity age a year or more greater than his reading achievement age, as shown by the two tests, provided he is one year or more retarded in grade placement for his chronological age. Cases of serious retardation thus discovered

Boston University
School of Education

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The two tests were prepared for use together. They were standardized on the same groups of children and under exactly the same conditions. The authors feel that a serious reading deficiency exists when a child has a reading capacity one a year or more greater than his reading achievement age, as shown by the two tests, provided he is one year or more retarded in grade placement for his chronological age. Cases of certain retardation thus discovered

should then be given thorough physical examinations, followed by testing with the Analysis of Reading Difficulty test. This is an individual test requiring from 30 to 60 minutes to administer. "It consists of a battery of individual tests in oral and silent reading, supplemented by a systematic observation and record of faulty habits, confusions, and inadequate skills in different reading abilities."[1/] Remedial work is based on the check list of difficulties in the Individual Record Blank, as found by the test. Suggestions for remedial work are briefly outlined.

This series of tests provides a thorough, yet simple, means of locating and analyzing both mild and serious reading deficiencies. Perhaps its greatest contribution is that of providing (in the Analysis of Reading Difficulty) a plan for diagnosis of individual cases of severe reading deficiency which is simple enough to be used by the studious teacher and inexpensive enough to be afforded by any school system.

Contributions Made by McCallister

A study on the secondary school level.-- A recent volume by McCallister [2/] outlines studies made by him which were more specifically directed toward the secondary-school level than the

1/ Donald D. Durrell, Durrell Analysis of Reading Difficulty, Manual of Directions. World Book Company, Yonkers-on-Hudson, New York, 1937. p. 2.

2/ James M. McCallister, Remedial and Corrective Instruction in Reading: A Program for Upper Grades and High School. D. Appleton-Century Company, New York, 1936. xviii + 300 p.

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studies discussed above. On the other hand, they do not represent such detailed, scientific research as is the case with these other studies. McCallister, rather, applies the researches of others in situations at the upper grade and high-school level and then tests his results.

Brief discussions of reading disability in the upper grades and high school and of the nature of the reading process are followed by a more detailed discussion of diagnosis and treatment of deficiencies of retarded readers in the seventh, eighth, and ninth grades. He classifies deficiencies under the three headings of (1) deficiencies in comprehension, (2) deficiencies in fundamental habits of recognition, and (3) deficiencies in rate of reading. He suggests three ways of identifying retarded readers at the junior high-school level, (1) by means of a testing program, (2) by means of cumulative records, and (3) by means of school performance, but recommends the use of the three methods combined.

Diagnosing reading deficiencies.-- After a retarded reader has been identified, McCallister suggests diagnosis of the pupil's deficiencies in reading by finding the answers to three questions: (1) What is the character of the pupil's deficiencies? (2) When did the deficiencies begin? (3) What caused them to begin? To answer these questions, surveys of the school history, home environment, mental ability, health status, personality traits, and present reading status of the pupil are needed.

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When these surveys have been brought together, case studies are

made. McCallister [1] gives in detail reports of three case studies to illustrate the procedures employed. Scores on standardized reading tests were assembled, reports on school work were obtained from instructors, power of comprehension, rate of reading, and power of perception and recognition were studied in connection with the pupil's mental ability and school history, and as a result a diagnosis of reading difficulties was made.

Remedial or corrective instruction.-- Physical defects were corrected as far as possible and a plan for increasing reading experience, which aimed .... "(1) to develop power to interpret reading materials of higher level of difficulty, (2) to stimulate interest in voluntary reading, and (3) to develop greater facility and accuracy in word recognition," [2] was adopted. The term "remedial" is used by McCallister to refer to cases of reading disability so severe as to require individual treatment, while the term "corrective" is used by him to imply group instruction based on common needs. He emphasizes the fact that in general the same principles of learning and the same methods of teaching that are used in regular reading classes may be used in most cases of remedial or corrective teaching.

McCallister [3] prefers to group pupils having similar difficulties in reading into groups by themselves, but states that if the numbers are not large enough to make segregation practical, ... "several

1/ Op. cit., p. 108-158.

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groups may be taught in one class by means of differentiated instruction." He emphasizes the need of making each pupil in corrective-reading classes feel that his participation in the class is voluntary.

Reading materials used by him included the McCall-Crabbs Standard Test Lessons in Reading and other specially prepared remedial reading materials, collections of short stories, literary selections, materials with adjusted vocabularies,[1/] sets of readers, and textbooks in content subjects. He found that most pupils made gains in reading skills but that the amount of improvement varied widely with different individuals. He found some evidence of the persistence of the improvements for periods of at least six to nine months.

Corrective-reading instruction in English classes.-- McCallister suggests that if no other provision for corrective-reading instruction can be made, a part of the English class period can be used to advantage for this purpose. He recommends the seventh, ninth or tenth grades as the logical places to introduce this work, depending on the administrative set-up and the grade that follows a break in the continuity of grades in a building.

A five-unit program for corrective reading in the English classes is proposed by him. This includes (1) a voluntary reading unit, where class periods are devoted to reading and teacher-pupil conferences, (2) a silent-reading unit for improving interpretation, (3) a silent-reading unit planned to increase rate of reading, (4)

1/ The Thorndike Library, (12 Volumes), for example; published by D. Appleton-Century Company, New York, 1935, 1936.

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an oral-reading unit, and (5) a reading-study unit planned to guide pupils in the use of books.

Reading and the content subjects.-- McCallister calls attention to the fact that reading activities essential to effective study vary with the subject at hand. Each subject has its own vocabulary and its own type of reading material. This fact is making the teacher of each subject more and more a teacher of reading as well.

McCallister presents a technique which provides for training in reading in the content subjects as part of the work of the teachers of those subjects. This technique is planned so as not to interfere with the regular work in the subject. As a matter of fact, the better teachers in the content subjects have been using some such techniques for years.

Hovious and Corrective-Reading Texts

A ready-made program.-- Mention has already been made of the Gates-Peardon 1/ Practice Exercises as a ready-made source of corrective-reading material for use with pupils with specific types of reading difficulties as screened out by the Gates Silent Reading Tests. Carol Hovious 2/ has prepared two textbooks in reading, each of which presents a more or less complete reading program for the secondary-school level. Her Flying the Printways is written on a

1/ Arthur I. Gates and C. C. Peardon, op. cit.

2/ Carol Hovious, Flying the Printways. D. C. Heath and Company, New York, 1938. xii + 525 p.

_____ Following Printed Trails. D. C. Heath and Company, New York, 1936. x + 371 p.

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1/ Arthur I. Gates and C. C. Peardon, op. cit.

2/ Carol Novions, *Flying the Friendways*. D. C. Heath and Company, New York, 1938. xii + 320 p.

Following Friendly Trails. D. C. Heath and Company, New York, 1938. x + 371 p.

somewhat simpler level than Following Printed Trails.

Miss Hovious believes that the reading program should extend from kindergarten through college. She [1] says:

> "We have quarreled with the grade schools because they discontinued direct training in how to read somewhere between the fourth and sixth grades. To move this training up to the seventh grade and then drop it merely changes the point at which the evil begins.
>
> "Reading is an art which is not learned at any given time. It cannot be completed at any grade level. As the pupil approaches more and more mature reading problems, he needs more and more mature reading ability. This fact is especially felt when he moves from one school segment to another--from grade school to high school, for example, or from high school to college--for each new segment brings with it new reading needs."

Miss Hovious has made a highly successful attempt to make her books attractive to adolescent boys and girls. The more recent of her two books (Flying the Printways), particularly, is a sparkling example of making the contents of a textbook in what could easily be a drab field interesting and attractive.

Flying the Printways was probably prepared for use by all pupils in the first year of the junior high school, although it is dedicated as a .... "book for everyone, young or old, rich or poor, who would read with greater speed, accuracy and intelligence." Miss Hovious' philosophy regarding growth in reading skills, as quoted in a previous paragraph, is that of continued training in reading as long as the pupil remains in school. However, her two books, and especially Flying the Printways, offer what seems to the writer to

1/ Carol Hovious, Teacher's Manual for Flying the Printways. D. C. Heath and Company, New York, 1938. p. v.

a somewhat simpler level than Following Printed Trails.

Miss Novious believes that the reading process should extend from kindergarten through college. She [1] says:

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Miss Novious has made a highly commendable effort to make her books alternative to adolescent boys and girls. The more recent of her two books (Flying the Friendly(s)), particularly, is a sparkling example of making the contents of a textbook in what could easily be a dull field interesting and entertaining.

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[1] Laird Novious, Teacher's Manual for Flying the Friendly. N. C. Heath and Company, New York, 1953. p. 7.

be ready-made material of the highest type for use in corrective-reading classes in the secondary school. The book includes, in her sparkling style, exercises on measuring rate of reading, finding the main idea of a paragraph or selection, finding the details, connecting what one reads with what he already knows, following directions, phrasing, word meaning, and word pronunciation.

As English textbooks.-- Flying the Printways fits especially well into a remedial-reading program conducted as a part of the English course. The author even suggests it as a basal book in English, particularly in traditionally organized schools. She refers to it as a reading program coupled with a general-language program.

She also prefers its use in group instruction, rather than in individual work,[1/] for most pupils. A few seriously handicapped pupils, she says, will need individual help. An interesting comment is that superior pupils will make approximately twice the gain in reading skills (presumably in terms of grade scores) that pupils having intelligence quotients under 100 will make. Her volumes present a corrective program in reading for slow readers; they do not present a strong diagnostic program.

The Washington, D. C., Study

Corrective reading in junior high schools.-- Monroe and Backus [2/] report what they term a remedial-reading study and ex-

1/ Carol Hovious, Teacher's Manual for Flying the Printways. op. cit., p. vii.

2/ Marion Monroe and Bertie Backus, Remedial Reading. Houghton Mifflin Company, Boston, 1936. xi + 171 p.

be ready-made material of the digest type for use in corrective-reading classes in the secondary school. The book includes, in non-sparkling style, exercises on measuring rate of reading, finding the main idea of a paragraph or selection, finding the details, connecting what one reads with what he already knows, following directions, phrasing, word meaning, and word pronunciation.

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Corrective reading in junior high schools.-- Horrocks and Sadoke[2] report that they term a remedial-reading study and ex-

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[2] Marion Horrocks and Bertie Sadoke, *Remedial Reading*. Houghton Mifflin Company, Boston, 1936. xi + 171 p.

periment carried on in the schools of Washington, D. C., during the school years 1934-35 and 1935-36. Remedial- or corrective-reading activities were conducted in all grades in selected schools throughout the city. Two junior high schools were chosen. In one, corrective-reading groups were selected on the basis of grade scores earned on the Metropolitan Reading Test. In this instance mental ages were not used as a criterion in selecting the corrective cases, as they had been calculated from intelligence tests requiring reading, and it was feared that many of the low mental ages were merely another indication of low reading ability. In the other school, in addition to grade scores on the Metropolitan Achievement Test, teachers' judgments and intelligence tests were used to select those showing reading retardation as well as some promise of ability to profit by the reading instruction.

In the first junior high school corrective instruction was carried on by two regular English teachers in grade seven and by counselors with a group of 17 special cases from grades eight and nine. In the other school, the 34 pupils were grouped in one section and the reading instruction was given in the English period, the English work being disregarded. Each group was given a number of tests, such as the Sandgren-Woody Silent Reading Tests,[1] the Gates Silent Reading Tests,[2] and Gray's Oral Reading Paragraphs.[3]

1/ Published by World Book Company, Yonkers-on-Hudson, New York.

2/ Ibid.

3/ Published by Public School Publishing Company, Bloomington, Illinois

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In the first junior high school corrective instruction was carried on by two regular English teachers in grade seven and by counselors with a group of 17 special cases from grades eight and nine. In the other school, the 64 pupils were grouped in one section and the reading instruction was given in the English period, the English work being discontinued. Each group was given a number of tests, such as the Gardner-Moody Silent Reading Tests,[1] the Gates Silent Reading Tests,[2] and Gray's Oral Reading Paragraphs.[3]

[1] Published by World Book Company, Yonkers-on-Hudson, New York.

[2] Ibid.

[3] Published by Public School Publishing Company, Bloomington, Illinois

The English teachers who were conducting the corrective-reading classes met once each week with the counselors for discussion and suggestions. Frequent individual conferences with the teachers were also held by the counselors. A word-discrimination test was prepared and given to the groups. This test brought out discrimination of vowel sounds and consonant sounds, as well as reversals and sounds added or omitted. Considerable attention was given to the use of reading in study.

Corrective or remedial work was conducted in accordance with the following principles:

1. "Remedial work is most effective when given individually; however, it can be given effectively to small groups, if individual needs are not overlooked in the group.[1]
2. "Remedial work is most effective when given at a favorable time of day, at systematic, regular periods.[2]
3. "Remedial reading requires a supply of interesting and varied reading materials suitable to the child's needs and reading level.[3]
4. "Remedial reading requires the specific training of teachers for the work.[4]
5. "The remedial reading program may be carried out by a specially trained remedial teacher or by regular teachers working with their own poor readers under supervision."[5]

Monroe and Backus, it will be noted, often use the term "remedial" in much the same sense that the term "corrective" is used in this report.

1/ Monroe and Backus, op. cit., p. 39.

2/ Ibid., p. 40.

3/ Ibid., p. 41.

4/ Loc. cit.

5/ Ibid., p. 42

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1/ Monroe and Backus, op. cit., p. 89.

2/ Ibid., p. 40.

3/ Ibid., p. 41.

4/ Loc. cit.

5/ Ibid., p. 42

In the second junior high school, in addition to corrective instruction conducted in accordance with the above principles, a library club was formed, for the purpose of stimulating an interest in free reading. Meetings were held once a week, and informal oral reports on books read were given. No formal checks on the books read were used, other than keeping track of the amount of reading done.

In the first school, at the end of 14 weeks, one group of 26 pupils made a median gain of 1.2 years in reading achievement. The other group of 37 pupils made a median gain of 0.5 year. The 17 special cases, instructed in groups of two to four and meeting once a week for 14 weeks, made a median gain of 0.9 year. In the second school the group of 34 children made a median gain of 0.7 year in the mechanics of reading and 1.3 years in silent reading during the 14 weeks' period. Gains resulting from the corrective work were often accompanied by greater interest in reading and improved behavior.

Corrective reading in the senior high school.-- A group of 16 students--10 from grade 10B, four from grade 11A, and two from grade 11B--were selected for corrective instruction at the Woodrow Wilson High School. The Haggerty 1/ Reading Examination, Sigma 3, Gray's 2/ Oral Reading Paragraphs, Monroe 3/ Silent Reading Test, Iota Word Test, 4/ and Word-Discrimination Test 5/ were given at the beginning

1/ Published by World Book Company, Yonkers-on-Hudson, New York.

2/ Published by Public School Publishing Company, Bloomington, Illinois

3/ Ibid.

4/ Published by C. H. Stoelting Company, Chicago, Illinois.

5/ See Appendix B, page 115.

In the second junior high school, in addition to corrective instruction conducted in accordance with the above principles, a library club was formed, for the purpose of stimulating an interest in free reading. Meetings were held once a week, and informal oral reports on books read were given. No formal checks on the books read were made, other than keeping track of the amount of reading time.

In the first school, at the end of 12 weeks, one group of 20 pupils made a median gain of 1.2 years in reading achievement. The other group of 37 pupils made a median gain of 0.5 year. The 12 special cases, instructed in groups of two to four and meeting once a week for 14 weeks, made a median gain of 0.9 year. In the second school the group of 34 children made a median gain of 0.7 year in the mechanics of reading and 1.3 years in silent reading during the 14 weeks' period. Gains resulting from the corrective work were often accompanied by greater interest in reading and improved behavior.

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2/ Published by Public School Publishing Company, Bloomington, Illinois

3/ Ibid.

4/ Published by G. E. Stechert Company, Chicago, Illinois.

5/ See Appendix B, page 116.

of the study. The class was called the Special English Class, and met as a regular class on the fourth period each day in place of the regular English class. Graduation credit was allowed for the course. Ten to fifteen minutes daily were devoted to vowel and consonant work. Vowel and consonant work in long words was used. Both silent and oral reading exercises were utilized. The basis of comprehension work was the Standard Test Lessons in Reading [1] and Following Printed Trails.[2] Dictaphones were used for improving oral reading.

After 16 weeks of corrective reading these students showed a median gain of 2.0 years in reading achievement. Monroe and Backus conclude that remedial (corrective) reading may be given successfully at the senior high school level. In fact, the gains for this group were the greatest of any of the groups taking part in corrective instruction.

Other Studies

Barry and Pratt [3] raise an interesting question regarding the aims of a remedial or corrective-reading program at the secondary-school level by asking whether such a program should be designed to increase the pupil's power in reading, his power to read rapidly and to comprehend readily, or to improve the study skills which will be utilized in the classroom. They state that:

1/ McCall and Crabbs, op. cit.

2/ Hovious, op. cit.

3/ Linda Barry and Marjorie Pratt, "A Remedial Reading Program in a Public High School," The School Review (January, 1937) 45: 12-27.

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After 10 weeks of corrective reading these students showed a median gain of 2.0 years in reading achievement. Monroe and Backus conclude that remedial (corrective) reading may be given successfully at the senior high school level. In fact, the gains for this group were the greatest of any of the groups taking part in corrective instruction.

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Berry and Pratt [3] raise an interesting question regarding the aim of a remedial or corrective-reading program at the secondary-school level by asking whether such a program should be designed to increase the pupil's power in reading, his power to read rapidly and to comprehend readily, or to improve his study skills which will be utilized in the classroom. They state that:

[1] Monroe and Backus, op. cit.

[2] Novinus, op. cit.

[3] Linda Berry and Marjorie Pratt, "A Remedial Reading Program in a Small High School," The School Review (January, 1937) 45: 13-27.

"If the first consideration is to be the purpose of the reading class, then the activities included would be training in rapid word recognition, training in comprehension of word groups, sentences and paragraphs, and training in rapid reading. If the second consideration is to be the purpose of the reading class, to these activities will be added training in organizing materials, such as locating material, taking notes, outlining, generalizing, training in summarizing materials, and training in evaluating materials."

They raise an important point regarding the application and use of reading skills. However, most studies reviewed have used the first aim rather than the second.

Deal and Seamans [1/] report some interesting observations resulting from group instruction in reading in high school. They abandoned the idea of teaching vocabulary from an arbitrary list, as .... "words so memorized, even though made as colorful as possible in presentation, were not so likely to have significance as were those which the child encountered in his reading." They set up three specific aims for corrective-group instruction in reading: (1) to improve reading and comprehension, (2) to increase vocabulary, and (3) to cultivate a desire to read for pleasure and taste in the selection of what is read.

Barry, Madden and Pratt,[2/] in a study of reading difficulties of high-school pupils conclude ....

1/ Ada B. Deal and Albert Seamans, "Group Remedial Reading in High School". The English Journal (High School edition, May, 1937) 26: 355-62.

2/ Linda Barry, Mable Madden, and Marjorie Pratt, "Reading Difficulties of High School Pupils", The School Review (January, 1938) 46: 44-47.

"If the first consideration is to be the purpose of the reading class, then the activities included would be training in rapid word recognition, training in comprehension of word groups, sentences and paragraphs, and training in rapid reading. If the second consideration is to be the purpose of the reading class, to these activities will be added training in organizing materials, such as locating material, taking notes, outlining, generalizing, training in summarizing materials, and training in evaluating materials."

They raise an important point regarding the application and use of reading skills. However, most studies reviewed have used the first aim rather than the second.

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[1] Ada. E. Deal and Albert Sorenson, "Group Remedial Reading in High School". The English Journal (High School edition, May, 1927) 16: 335-63.

[2] Linda Barry, Nelle Ladden, and Marjorie Pratt, "Reading Difficulties of High School Pupils", The School Review (January, 1938) 46: 44-47.

"(1) that the basic difficulty which high-school pupils encounter is limited vocabulary; (2) that training to develop a technique of word attack should precede other vocabulary training; (3) that training to enrich vocabulary should be carried out mainly through use of words in context; (4) that training in comprehension may be classified in two groups: (a) training to get the central idea and (b) training to find the supporting details; (5) that improvement of comprehension results from the use of stimulating materials employed in a variety of ways; (6) that much improvement in rate of reading results from overcoming difficulties in vocabulary and comprehension; (7) that if rate is not improved as a result of vocabulary and comprehension practice, attention should be directed to (a) increasing eye-span and concentration span, and (b) providing opportunity for extensive practice with interesting materials."

Gist [1/] echoes a thought frequently expressed by others that all teachers in secondary schools should be teachers of reading. He says:

"It is .... obvious to many educators and to specialists in the field of reading, that each department in the secondary schools should contribute to the development of silent reading habits. This is amply justified when we assert that each subject-matter field should have as one of its major aims the development of the specialized reading habits needed in that field."

The literature of the field offers few references to the effect of extensive free reading on the reading abilities of secondary-school pupils. It would seem to be logical that extensive reading of materials of the pupil's own choice would improve his reading skills. Probably there is an improvement in the skills used in that particular type of reading, but at least one investigator finds no improvement in the skills which are measured by standard

1/ Arthur S. Gist, "The Teaching of Reading in the Secondary Schools". California Journal of Secondary Education, (April, 1936) 11: 55-56.

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1/ Arthur S. Dist, "The Teaching of Reading in the Secondary Schools". California Journal of Secondary Education, (April, 1932) 11: 98-99.

reading tests. McCullough,[1] in reporting one such experiment, says:

> "The number of books read in class, outside of school, or both, which were reported during the nine weeks' course seemed to have no effect on the amount of improvement made on the two tests, the correlation being .049 ± .208."

However, Miles,[2] in an article summarizing some contributions of research to teaching and curriculum making in English, reports several studies which resulted in definite gains in reading scores from the use of extensive reading. Some studies reported as much as a year's gain in a period of 16 weeks.

Witty and Kopel [3] report that about 25 per cent of retarded readers need ocular attention. The whisper test of hearing, they claim, is sufficient to screen out any whose hearing is deficient enough to be a factor in causing reading retardation. They state that hand and eye dominance, singly and in combination, are unrelated to reading ability. Their evaluation of many attempts at remedial and corrective reading is not an optimistic one.

> "We do not wish to deprecate the sincere efforts of many teachers and research workers. But we do question whether any enduring, worth-while changes result from the typical remedial-reading program. We doubt whether the test results usually reported are significant. We question

1/ Constance McCullough, "Improving Comprehension in Grade IX". The School Review (April, 1937) 45: 272.

2/ Dudley Miles, "The Contributions of Research to Teaching and Curriculum Making in English, June, 1935, through June, 1937". The English Journal (June, 1938) 27: 501.

3/ Paul A. Witty and David Kopel, "Motivated Remedial Reading in the High School: A Preliminary Report". The English Journal (September, 1936) 25: 539-40.

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Summary

This chapter has attempted to point out some of the changes in the demands made on the secondary-school population as the result of social changes of the past century, some of the problems which have resulted as reported in current educational literature, some of the ways in which the problems are being attacked, and some evaluations of the remedial measures which have been used. The painstaking, scientific researches of Gates, Durrell, and others, the applications of some of these researches in what was the more or less unexplored field of the secondary school by McCallister, Hovious, and others, and reports from teachers in the secondary schools have been summarized.

The field of reading in the elementary school has without doubt been the subject of more intensive scientific investigation than any other field of the school curriculum. Not so much is known about the teaching of reading in the secondary school. At present, effort in general is directed toward remedial and corrective reading at that level, rather than at guiding the maturing-reading skills of all pupils.

Methods of diagnosing deficiencies of retarded readers have been developed to the point where in the hands of a trained in-

1/ Witty and Kopel, op. cit., p. 542.

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Methods of diagnosing deficiencies of retarded readers have been developed to the point where in the hands of a trained in-

[1] Witty and Kopel, op. cit., p. 522.

vestigator they produce exceedingly helpful results. In general they are rather complicated for use by the classroom teacher unless she has had some special training or is willing to do considerable independent study.

Our knowledge of methods and materials for remedial or corrective instruction in reading at the secondary-school level has still a long way to go before it will be adequate to the existing needs. The term "sterile, monotonous, remedial drill", while certainly overdrawn, still has an element of truth in it. However, there is considerable scientific evidence that remedial- and corrective-reading materials consisting of paragraphs and short selections, when read for a specific purpose and tested for comprehension, yield results which improve reading skills in most cases. There are those, however, who doubt that gains so made are large enough to have much significance.

Organization for individual and small group work in remedial and corrective reading in high school is the generally accepted practice, but some studies report good results with large groups, provided the pupils have similar and not too serious types of retarded reading ability. Most studies report the use of full class periods two to five times weekly. A few refer to the use of portions of the English period for this purpose, and numerous studies emphasize the need of teaching high-school pupils how to read in their content subjects.

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medial reading, or at least the necessity for trained supervision if the work is to be done by the classroom teacher.

Limited vocabulary is referred to as the most common basic deficiency of secondary-school students who are poor readers. Improvement in this deficiency is often sought by giving, first, training in a technique of word attack and, secondly, training to enrich vocabulary through use of words in context. Use of words in isolation has not proved successful in developing word meaning. Training in comprehension usually accompanies training to improve vocabulary. This involves training to get the main idea of a paragraph or selection, and training in getting the details. The importance of rate of reading is stressed. Improvement in rate has been secured as a result of gains in vocabulary and comprehension, as well as from practice under time pressure.

There are those who profess skepticism regarding the value of nearly all phases of remedial and corrective reading at the secondary-school level, excepting those phases having to do with remedial physical defects. They question the value of remedial drill and of extensive reading as mediums for improvement. Nevertheless the problem is here and will be here for a long time. The writer senses a trend toward giving more attention to directing the maturing reading skills of all readers instead of confining efforts to retarded readers, for, as Miss Hovious [1] says, the high school, in

1/ Carol Hovious, "What Should Be Done About Reading in the Secondary School?" California Journal of Secondary Education, (January, 1936) 11: 17.

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1/ Carol Jordan, "What Should We Do Now About Reading in the Secondary School?" Bulletin Journal of Secondary Education, (January, 1956) 21: 17.

addition to providing training for handicapped children, "must also provide for training [in reading] that will bring continued growth to the normal child."

CHAPTER IV

RESULTS OBTAINED WITH THE EXPERIMENTAL GROUP

Measuring Changes in Reading Status

Supervision of the experiment.-- In an earlier section of this report [1] it was pointed out that the writer's participation in this study was primarily a supervisory one. His only direct handling of the pupils was through the individual conferences held with each member of the corrective-reading groups in December and through the giving of the Terman Group Test of Mental Ability on December 8, 1937. The Traxler Silent Reading Test, Form I, and the Haggerty Reading Examination, Sigma III: Form A, were given by the English teacher at the beginning of the study to all members of the ninth grade. The same teacher administered the alternate forms of the two tests to the same pupils at the close of the study in June, 1938. The Stanford Revision of the Binet-Simon Test of Mental Ability was given to the 33 members of the corrective-reading groups by the kindergarten teacher in the school system. The Word-Discrimination Test given these 33 pupils at the beginning of the study was administered by the English teacher. All corrective reading instruction was given in the English classes by the regular English teacher.

1/ See pages 6 and 7.

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RELATING GOALS TO THE EXPERIMENTAL RESULTS

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[1] See pages 6 and 7.

The problem thus became, so far as the present writer's part in it is concerned, an administrative and supervisory one. The need for doing something for the poor readers had been frequently expressed, but teaching time for special work with these pupils was not available. Hence the plan described in Chapter II was evolved, and it was determined to make some measurement of its efficiency.

It should be emphasized that the English teacher in whose classes this work was carried on had had little training in remedial- or corrective-reading procedures. She is well trained for her work as an English teacher, having had a year of post-graduate study in England following her earning of the A. B. degree. She has also attended summer sessions at several well known universities. It was one of the purposes of this study to attempt to determine the practicability of corrective-reading instruction in regular English classes, since no other opportunity for such instruction at the secondary-school level was available in this particular situation.

Testing at the conclusion of the experiment.-- As has been stated previously (page 34), Form II of the Traxler Silent Reading Test was given to all members of the class on June 1, and Form B of the Haggerty Reading Examination, Sigma III, was given to the same group on June 7. By comparing scores made in June with those made on alternate forms of the tests in the fall it was originally assumed that a measure of at least some phases of the reading growth of the members of the ninth grade, both within and outside the corrective-reading groups, could be made.

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All group tests were administered in exact accordance with the standardized procedures as laid down in the respective manuals of directions. All timing was done with a stop watch. Scoring and checking were performed by the English teacher and a young college graduate who was doing practice teaching in the system.

Gains and Losses in Reading Scores

Changes shown by the Traxler test.-- At the beginning of this study, on October 1, 1937, the ninth-grade group numbered 86 pupils. At the close of the study, on June 1, 1938, four of these 86 had withdrawn from school, while one new pupil had entered. The corrective-reading groups lost one member, reducing their total number to 32. The test scores of the pupil who entered after this study was begun and of those who withdrew before the June testing have been excluded from all computations of test results reported in the following pages.

A comparison of the results on the two forms of the Traxler test shows that the ninth-grade group as a whole increased its reading rate 21 words per minute. It scored two school months higher on story comprehension, seven months higher on word comprehension, six months higher on paragraph comprehension, and six months higher on total comprehension (a score combining the three preceding comprehension scores). These facts are set forth in Table 8, columns 2, 3, and 4. It should be kept in mind that the scores of 50 pupils who have had no corrective-reading instruction

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Gains and losses in reading score

Changes shown by the Traxler test.-- At the beginning of this study, on October 1, 1957, the ninth-grade group numbered 66 pupils. At the close of the study, on June 1, 1958, four of these 66 had withdrawn from school, while one new pupil had entered. The corrective-reading group lost one member, reducing their total number to 65. The test scores of the pupil who entered after this study was begun and of those who withdrew before the June testing have been excluded from all computations of test results reported in the following pages.

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have been averaged, in columns 2 and 3, along with the scores of 32 pupils who have received such instruction. Although the first form of the Traxler test was given on October 18, actual instruction in corrective reading was not started until December first.

In columns 5, 6, and 7 of Table 8, the average reading rates and comprehension-grade scores for October and June are given for the

Table 8. Comparison of Average Reading Rates and of Average Grade Scores in Comprehension Made (a) by All Pupils of the Ninth Grade, and (b) by the 32 Corrective-Reading Pupils, on the Traxler Silent Reading Tests in October, 1937, and June, 1938.

	(a) All Ninth-Grade Pupils			(b) Corrective-Reading Pupils		
	October Test	June Test	Gain, Months	October Test	June Test	Gain, Months
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Average Reading Rate, Words per Minute...	222.6	243.6	21	188	207	19
Average Grade Score, Story Comprehension.	8-6	8-8	2	7-3	7-3	0
Average Grade Score, Word Comprehension..	9-3	10-0	7	7-9	8-6	7
Average Grade Score, Paragraph Comprehension.....	9-5	10-1	6	8-5	8-9	4
Average Grade Score, Total Comprehension.	9-2	9-8	6	8-2	8-6	4
Number of Pupils.....	82	82	-	32	32	-

32 members of the corrective-reading groups. These figures show that a slightly smaller increase in rate of reading was made by the corrective groups than was made by the entire group of 82 ninth-grade pupils. No average improvement was shown in story comprehension.

have been averaged, in columns 2 and 3, along with the scores of 32 pupils who have received such instruction. Although the first form of the Treadgold test was given on October 16, normal instruction in corrective reading was not started until December first.

In columns 5, 6, and 7 of Table 6, the average reading rates and comprehension-grade scores for October and June are given for the

Table 6. Comparison of Average Reading Rates and of Average Grade Scores in Comprehension Made (a) by All Pupils of the Ninth Grade, and (b) by the 32 Corrective-Reading Pupils, on the Treadgold Silent Reading Tests in October, 1937, and June, 1938.

	(a) All Ninth-Grade Pupils			(b) Corrective-Reading Pupils		
	October Test	June Test	Gain, Months	October Test	June Test	Gain, Months
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Average Reading Rate, Words per Minute...	232.8	248.6	21	188	207	16
Average Grade Score, Story Comprehension.	8-8	9-4	2	7-3	7-8	0
Average Grade Score, Word Comprehension..	8-2	10-0	7	7-3	8-6	7
Average Grade Score, Paragraph Comprehension.....	9-3	10-1	6	6-5	8-9	4
Average Grade Score, Total Comprehension.	9-2	9-9	6	6-2	8-6	4
Number of Pupils.....	82	32	-	32	32	-

32 members of the corrective-reading group. These figures show that a slightly smaller increase in rate of reading was made by the corrective group than was made by the entire group of 82 ninth-grade pupils. No average improvement was shown in story comprehension.

The gain in word comprehension just equalled the gain made by the entire group on this item. Gains in paragraph comprehension and total comprehension were slightly smaller than the gains made by the entire grade.

Unsuitability of the Haggerty tests.-- When the study was planned, it was taken for granted that Form A and Form B of the Haggerty Reading Examination were equivalent forms. Unfortunately this proved not to be the case. A score of 31 on Form A, for example, has the same grade-score value as a score of 40 on Form B.[1/] The test's manual of directions provides age norms for both tests, but does not provide grade norms in full. It does, however, provide grade scores for May for both forms of the test for grades 5 to 12 inclusive.[2/]

Having age norms at monthly intervals for both tests, and grade norms at one year intervals for both tests, grade scores by months were obtained by interpolation. These grade scores are shown in Table 9. It was hoped that through the use of grade scores for both tests thus obtained, a means of direct comparison between the November and June tests would be available. Raw scores for each pupil were converted into grade scores by using Table 9, with the surprising result that the November grade scores were almost uniformly higher than the June grade scores. The average grade scores for the 81 pupils who took both forms of the test were 10-3 for November and 9-7 for June.

1/ M. E. Haggerty, and Laura C. Haggerty, Manual of Directions (Revised) for Haggerty Reading Examination, Sigma 3. World Book Company, Yonkers-on-Hudson, New York, 1929. p. 6, Tables 2 and 3.

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[1] M. E. Haggerty, and Irene O. Haggerty, Manual of Directions (Revised) for Haggerty Reading Examination, Series B. World Book Company, Yonkers-on-Hudson, New York, 1928. p. 6, Tables 2 and 4.

[2] Loc. cit., Tables 4 and 5.

Table 9. Grade Scores Obtained by Interpolation for Form A and Form B of the Haggerty Reading Examination, Sigma 3.

Age	Grade	Haggerty Scores		Age	Grade	Haggerty Scores	
		Form A	Form B			Form A	Form B
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
10-0	-	16	25	13-3	8-0	69	69
10-1	-	17	26	13-4	8-0	69	70
10-2	-	19	28	13-5	8-1	70	71
10-3	-	20	29	13-6	8-1	70	71
10-4	-	21	30	13-7	8-2	71	72
10-5	-	22	31	13-8	8-3	72	73
10-6	-	24	33	13-9	8-3	72	74
10-7	-	25	34	13-10	8-4	73	75
10-8	-	26	35	13-11	8-5	73	76
10-9	-	27	36	14-0	8-6	74	77
10-10	-	29	38	14-1	8-7	75	78
10-11	-	30	39	14-2	8-8	75	79
11-0	5-9	31	40	14-3	8-9	76	80
11-1	6-0	32	41	14-4	8-9	76	80
11-2	6-1	34	43	14-5	9-0	77	81
11-3	6-1	35	44	14-6	9-1	77	82
11-4	6-2	37	45	14-7	9-2	78	83
11-5	6-2	38	46	14-8	9-3	78	84
11-6	6-3	40	47	14-9	9-4	79	85
11-7	6-4	41	48	14-10	9-4	79	85
11-8	6-5	43	49	14-11	9-4	79	86
11-9	6-6	44	50	15-0	9-5	80	87
11-10	6-7	46	51	15-1	9-5	80	88
11-11	6-7	47	52	15-2	9-5	81	88
12-0	6-8	49	53	15-3	9-6	81	89
12-1	6-9	50	54	15-4	9-6	81	89
12-2	7-0	51	56	15-5	9-7	82	90
12-3	7-1	53	57	15-6	9-7	82	90
12-4	7-1	54	58	15-7	9-8	83	91
12-5	7-2	56	59	15-8	9-8	83	92
12-6	7-3	57	60	15-9	9-9	84	92
12-7	7-3	58	61	15-10	9-9	84	93
12-8	7-4	60	62	15-11	9-9	84	93
12-9	7-5	61	63	16-0	10-0	85	94
12-10	7-6	63	64	16-1	10-0	85	95
12-11	7-7	64	65	16-2	10-0	85	95
13-0	7-7	65	66	16-3	10-1	85	96
13-1	7-8	67	67	16-4	10-1	86	96
13-2	7-9	68	68	16-5	10-2	86	97

Table 3. Grade Scores Obtained by Interpolation for Form A and Form B of the Reading Vocabulary Section, Stanford Achievement Test.

Age	Grade	Reading Scores Form A	Reading Scores Form B	Age	Grade	Reading Scores Form A	Reading Scores Form B
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
10-0	-	19	25	13-3	5-0	49	68
10-1	-	17	26	13-4	5-0	68	70
10-2	-	19	28	13-5	5-1	70	71
10-3	-	20	29	13-6	5-1	70	73
10-4	-	21	30	13-7	5-2	71	72
10-5	-	22	31	13-8	5-3	72	73
10-6	-	24	33	13-9	5-3	72	74
10-7	-	25	34	13-10	5-4	73	75
10-8	-	26	35	13-11	5-5	73	76
10-9	-	27	36	14-0	5-6	74	77
10-10	-	29	38	14-1	5-7	75	78
10-11	-	30	39	14-2	5-8	75	78
11-0	3-9	31	40	14-3	5-9	76	80
11-1	3-0	32	41	14-4	5-0	76	80
11-2	3-1	34	43	14-5	5-0	77	81
11-3	3-1	35	44	14-6	5-1	77	82
11-4	3-2	37	45	14-7	5-2	78	83
11-5	3-2	38	46	14-8	5-3	79	84
11-6	3-3	40	47	14-9	5-4	79	85
11-7	3-4	41	48	14-10	5-4	79	86
11-8	3-5	43	49	14-11	5-4	79	86
11-9	3-6	44	50	15-0	5-5	80	87
11-10	3-7	46	51	15-1	5-5	80	88
11-11	3-7	47	52	15-2	5-6	81	89
12-0	3-8	49	53	15-3	5-3	81	89
12-1	3-9	50	54	15-4	5-0	81	89
12-2	3-0	51	55	15-5	5-7	82	90
12-3	3-1	53	57	15-6	5-7	82	90
12-4	3-1	54	58	15-7	5-8	83	91
12-5	3-2	56	59	15-8	5-8	83	92
12-6	3-3	57	60	15-9	5-9	84	92
12-7	3-3	58	61	15-10	5-9	84	93
12-8	3-4	60	62	15-11	5-9	84	93
12-9	3-5	61	63	16-0	5-0	85	94
12-10	3-6	63	64	16-1	5-0	85	94
12-11	3-7	64	65	16-2	5-0	85	95
13-0	3-7	65	66	16-3	5-1	86	96
13-1	3-8	67	67	16-4	5-1	86	96
13-2	3-9	68	68	16-5	5-2	86	97

Table 9. (concluded)

Age	Grade	Haggerty Scores		Age	Grade	Haggerty Scores	
		Form A	Form B			Form A	Form B
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
16-6	10-2	86	97	18-4	11-1	92	106
16-7	10-3	86	98	18-5	11-1	92	106
16-8	10-3	87	98	18-6	11-2	92	107
16-9	10-4	87	99	18-7	11-2	92	107
16-10	10-4	87	99	18-8	11-3	93	107
16-11	10-5	87	100	18-9	11-3	93	107
17-0	10-6	88	100	18-10	11-4	93	108
17-1	10-6	88	100	18-11	11-4	93	108
17-2	10-7	88	101	19-0	11-4	93	108
17-3	10-7	88	101	19-1	11-5	93	108
17-4	10-8	89	102	19-2	11-5	94	108
17-5	10-8	89	102	19-3	11-6	94	109
17-6	10-8	89	103	19-4	11-6	94	109
17-7	10-9	90	103	19-5	11-6	94	109
17-8	10-9	90	103	19-6	11-7	94	109
17-9	10-9	90	104	19-7	11-7	94	109
17-10	10-9	91	104	19-8	11-7	94	109
17-11	11-0	91	104	19-9	11-8	95	110
18-0	11-0	91	105	19-10	11-8	95	110
18-1	11-0	91	105	19-11	11-8	95	110
18-2	11-1	92	106	20-0	11-8	95	110
18-3	11-1	92	106	-	11-9	96	112

One of two conclusions can be drawn from the above average scores. Either the group of 81 pupils lost six school months in reading ability between November 8, 1937, and June 7, 1938, or a comparison of grade scores so computed from raw scores made on the two forms of the test is unreliable. The assumption that a group of 81 ninth-grade pupils retreated in reading ability as much as six school months during a period of school attendance extending over seven school months is obviously an absurdity. It is, moreover, a direct contradiction of the results shown by the use of the two forms of

Table 9. (concluded)

		Reading Scores				Vocabulary Scores	
Age	Grade	Form B	Form A	Age	Grade	Form A	Form B
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
18-8	10-2	86	97	18-4	11-1	92	104
18-7	10-3	86	96	18-5	11-1	92	106
18-8	10-3	87	98	18-6	11-2	92	107
18-9	10-4	87	99	18-7	11-2	92	107
18-10	10-4	87	99	18-8	11-2	93	107
18-11	10-5	87	100	18-9	11-3	93	107
17-0	10-5	88	100	18-10	11-4	93	108
17-1	10-6	88	100	18-11	11-4	93	108
17-2	10-7	88	101	18-0	11-4	93	108
17-3	10-7	88	101	18-1	11-5	93	108
17-4	10-8	89	101	18-2	11-5	94	108
17-5	10-8	89	102	18-3	11-6	94	108
17-6	10-9	89	102	18-4	11-6	94	109
17-7	10-9	90	102	18-5	11-6	94	109
17-8	10-9	90	103	18-6	11-7	94	109
17-9	10-8	90	103	18-7	11-7	94	109
17-10	10-9	91	104	18-8	11-7	94	109
17-11	11-0	91	104	18-9	11-8	95	110
18-0	11-0	91	105	18-10	11-8	95	110
18-1	11-0	91	105	18-11	11-9	95	110
18-2	11-1	92	105	20-0	11-8	90	110
18-3	11-1	92	106	-	11-9	90	111

One of two conclusions can be drawn from the above average scores. Either the group of 91 pupils last six school months in reading ability between November 8, 1937, and June 7, 1938, or a section of grade scores as computed from raw scores made on the two forms of the test is unreliable. The assumption that a group of 91 ninth-grade pupils retarded in reading ability as much as six school months during a period of school attendance extending over seven school months is obviously an absurdity. It is, moreover, a direct contradiction of the results shown by the use of the two forms of

the Traxler test. The conclusion must be drawn that Form A and Form B of the Haggerty Reading Examination, Sigma 3, are sufficiently lacking in equivalence to make them useless in measuring growth in reading ability. In fact, the authors themselves make no claim of equivalence of the two forms, and suggest that "after a lapse of time the test may be given again to show if progress has been made .... ".[1] They evidently advise the use of the same form for re-testing.

The age and grade norms for Form B of the Haggerty tests (Tables 3 and 5 in the Manual of Directions) are listed as revised norms, while those for Form A (Tables 2 and 4 of the Manual) are not so listed. It is possible that the lack of equivalence is due to this fact.

In view of this unsuitability, the scores made on Form B of the Haggerty Reading Examination, Sigma 3, have been discarded from further consideration in this study. The scores made on Form A have been useful in selecting the pupils for the corrective-reading groups. Form A scores are shown in Table 3 (page 14). Form B scores are given in Table 10 for purposes of comparison.

What would normal gains be?-- In judging the gains shown in Table 8, it is important to consider the effect of the normal maturing of the pupils. Many studies have failed to do this. Some growth in reading ability should result from the school experiences of the high-school or junior high-school student, even though he may not be

1/ Ibid., p. 7.

the Traxler test. The conclusion must be drawn that Form A and Form B of the Haggerty Reading Examination, Sigma 3, are sufficiently lacking in equivalence to make them useless in measuring growth in reading ability. In fact, the authors themselves make no claim of equivalence of the two forms, and suggest that "either a large of time the test may be given again to show its progress has been made .... ".[1] They evidently advise the use of the same form for retesting.

The age and grade norms for Form B of the Haggerty tests (Tables 2 and 5 in the Manual of Directions) are listed as revised norms, while those for Form A (Tables 2 and 4 of the Manual) are not so listed. It is possible that the lack of equivalence is due to this fact.

In view of this unreliability, the scores made on Form B of the Haggerty Reading Examination, Sigma 3, have been disregarded from further consideration in this study. The scores made on Form A have been useful in selecting the pupils for the corrective-reading groups. Form A scores are shown in Table 8 (page 14). Form B scores are given in Table 10 for purposes of comparison.

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[1] Ibid., p. 7.

Table 10. Raw Scores and Total Grade Scores Made by Members of the Corrective-Reading Groups on the Haggerty Reading Examination, Sigma 3: Form B, June 7, 1938.

Pupil Number	Vocabulary	Sentences	Paragraphs	Total	Grade Score
(1)	(2)	(3)	(4)	(5)	(6)
45.....	24	24	36	84	9-3
46.....	27	20	30	77	8-6
48.....	26	19	36	81	9-0
49.....	29	17	34	80	8-9
50.....	26	25	28	79	8-8
51.....	32	26	34	92	9-8
53.....	24	25	30	79	8-8
54.....	31	26	28	85	9-4
55.....	23	15	32	70	8-0
58.....	31	26	36	93	9-9
60.....	20	21	38	79	8-8
62.....	24	13	36	73	8-3
65.....	26	24	28	78	8-7
66.....	26	14	28	68	7-9
67.....	18	13	26	57	7-1
68.....	27	24	38	89	9-6
69.....	23	22	36	81	9-0
70.....	16	3	18	37	5-6
71.....	28	24	30	82	9-1
72.....	24	12	36	72	8-2
73.....	27	17	38	82	9-1
74.....	22	18	30	70	8-0
76.....	28	10	32	70	8-0
77.....	24	16	30	70	8-0
78.....	27	17	26	70	8-0
80.....	21	16	28	65	7-7
81.....	24	8	22	54	6-9
82.....	20	12	34	66	7-7
83.....	-	-	-	-	-
84.....	18	18	26	62	7-5
85.....	20	18	30	68	7-9
86.....	21	9	32	62	7-5
Standard Score, end of: Grade 6	-	-	-	54	-
Grade 7	-	-	-	68	-
Grade 8	-	-	-	80	-
Grade 9	-	-	-	93	-
Class Median[a]	-	-	-	88	9-5

a/ Median score of the 81 pupils who took the test.

Table 10. Raw Scores and Total Grade Scores Made by Members of the Conversative-Reading Groups on the Reading Reading Examination, Sign 3: Form B, June 7, 1956.

Pupil Number	Vocabulary	Sentences	Paragraphs	Total	Grade Score
(1)	(2)	(3)	(4)	(5)	(6)
46	26	24	34	84	9-3
47	27	20	30	77	8-3
48	28	19	34	81	8-0
49	29	17	34	80	8-8
50	26	25	32	73	7-3
51	22	26	34	82	8-3
52	24	25	30	79	8-6
53	31	26	28	85	8-4
54	23	15	32	70	8-0
55	31	26	33	92	9-8
56	20	21	36	79	8-3
57	24	16	33	73	8-3
58	28	24	33	77	8-7
59	28	15	25	68	7-9
60	27	18	26	71	7-1
61	27	24	32	83	8-6
62	23	22	36	81	8-0
63	16	3	18	37	4-6
64	23	24	30	82	8-1
65	24	12	36	72	8-3
66	27	17	38	82	8-1
67	22	18	30	70	8-0
68	29	10	32	70	8-0
69	24	12	30	70	8-0
70	27	17	34	78	8-0
71	21	16	28	65	7-7
72	24	8	22	54	6-8
73	20	12	24	56	7-7
74	-	-	-	-	-
75	18	16	26	60	7-8
76	20	15	30	65	7-5
77	21	9	22	52	7-5
Standard Score of: Grade 6	-	-	-	64	-
Grade 7	-	-	-	68	-
Grade 8	-	-	-	80	-
Grade 9	-	-	-	48	-
Class median	-	-	-	66	8-5

a/ Median score of the 21 pupils who took the test.

receiving reading instruction.

Since in the past it has not been customary to teach reading as such in grade nine, it is probably safe to assume that reading tests for the secondary-school level provide grade norms which include the influence of this condition. The growth indicated by the interval between a grade score of 9.0 and one of 10.0 on these reading tests has resulted, not from instruction in reading specifically, but from general scholastic experience during that time. Hence theoretically, since the school year normally consists of ten school months, an average group of ninth-grade pupils should increase their reading grade score ten school months during the year.

The interval between the giving of the two forms of the Traxler test in this study was approximately seven school months, although corrective-reading instruction was given to the poorer readers only for a period of six school months. Consequently gains of approximately seven months in the grade scores should be expected. Actually the 82 ninth graders who took both forms of the Traxler test gained six school months in reading comprehension during this period. The 50 students of this group who did not receive corrective-reading instruction gained eight school months in comprehension, while those who received corrective instruction gained only four months. With the latter group, just what part of the gains was due to instruction and what part was due to the maturing of the pupils cannot be ascertained from the present study.

Gains in rate of reading.-- One of the aims of the corrective

receiving reading instruction.

Since in the past it has not been customary to teach reading as such in grade nine, it is probably safe to assume that reading tests for the secondary-school level provide grade norms which include the influence of this condition. The growth indicated by the interval between a grade score of 9.0 and one of 12.0 on these reading tests has resulted, not from instruction in reading specifically, but from general adolescent experiences during that time. Hence theoretically, since the school year normally consists of ten school months, an average group of ninth-grade pupils should increase their reading grade score ten school months during the year.

The interval between the giving of the two forms of the Traxler test in this study was approximately seven school months, although corrective-reading instruction was given to the poorer readers only for a period of six school months. Consequently gains of approximately seven months in the grade scores should be expected. Actually, the 62 ninth graders who took both forms of the Traxler test gained six school months in reading comprehension during this period. The 31 students of this group who did not receive corrective-reading instruction gained eight school months in comprehension, while those who received corrective instruction gained only four months. With the latter group, just what part of the gains was due to instruction and what part was due to the maturing of the pupils cannot be ascertained from the present study.

Gains in rate of reading.-- One of the aims of the corrective

instruction was to improve rate of reading with many members of the corrective-reading groups, and to train them in adjusting rate to the type of reading at hand. Table 11 shows the reading rates of the 32 pupils who completed the corrective-reading work, as determined by the Traxler test. Column (2) shows the October rates and column (3) the June rates. Twenty-three of the 32 pupils increased their rate by amounts ranging from six to 120 words per minute, while nine showed losses in rate. The group as a whole increased its rate from 189 to 207 words per minute. The latter rate is still low (according to the Traxler standards about seventh-grade rate), but it must be remembered that it is the average rate of the slowest two-fifths of the class. Actually it is only about 13 words per minute slower than Traxler's standard for the end of grade nine.

Of more importance than rate alone is the ability of the pupil to adjust rate to the task in hand. Under the conditions of a timed test it is natural for some types of pupils to feel that they must speed up their reading beyond their natural rate. Table 11 shows, in addition to rate of reading, the comprehension scores made on the selection on which their rate was taken. The selection is about 1000 words in length. The comprehension scores represent unaided recall, as the test booklets were so arranged that it was impossible for the pupil to go back over what he had read. Four pupils on the October test and six on the June test received such low comprehension scores on this part of the test that their scores could not be accurately expressed as grade scores, even by inter-

instruction was to improve rate of reading with some meaning of the comprehensive-reading group, and to train them in adjusting rate to the type of reading at hand. Table 11 shows the reading rates of the 32 pupils who completed the comprehensive-reading work, as determined by the Traxler test. Column (2) shows the Gray-Leary rates, and column (3) the Monroe rates. Twenty-three of the 32 pupils increased their rate by amounts ranging from six to 120 words per minute, while nine showed losses in rate. The group as a whole increased its rate from 199 to 207 words per minute. The latter rate is still low (according to the Traxler standards about seventh-grade rate), but it must be remembered that it is the average rate of the slowest two-fifths of the class. Actually it is only about 12 words per minute slower than Traxler's standard for the end of grade nine.

Of more importance than rate alone is the ability of the pupil to adjust rate to the task in hand. Under the conditions of a timed test it is natural for some types of pupils to feel that they must speed up their reading beyond their natural rate. Table 11 shows, in addition to rate of reading, the comprehension scores made on the selection on which their rate was taken. The selection is about 1000 words in length. The comprehension scores represent unaided recall, as the test booklets were so arranged that it was impossible for the pupil to go back over what he had read. Four pupils on the Gray-Leary test and six on the Monroe test received such low comprehension scores on this part of the test that their scores could not be appropriately expressed as grade scores, even by inter-

Table 11. Changes in Reading Rate and Effect on Story Comprehension-Grade Scores, 32 Corrective-Reading Pupils, Traxler Silent Reading Tests, Forms A and B.

Pupil Number	Reading Rate			Story Comprehension-Grade Scores		
	October, Form A	June, Form B	Change	October, Form A	June, Form B	Change, Months
(1)	(2)	(3)	(4)	(5)	(6)	(7)
45.....	300	246	-54	6-7	*	-
46.....	162	192	+30	10-8	12-7	+19
48.....	246	228	-18	9-3	10-8	+15
49.....	192	186	- 6	9-3	9-3	0
50.....	228	294	+66	6-7	9-3	+26
51.....	192	186	- 6	10-8	9-3	-15
53.....	210	228	+18	6-7	*	-
54.....	276	312	+36	8-4	*	-
55.....	258	264	+ 6	4-7	8-4	+37
58.....	132	144	+12	10-8	8-4	-24
60.....	138	186	+48	8-4	4-7	-37
62.....	222	270	+48	10-8	9-3	-15
65.....	258	306	+48	4-7	6-7	+20
66.....	180	192	+12	6-7	9-3	+26
67.....	180	204	+24	8-4	6-7	-17
68.....	138	144	+ 6	9-3	*	-
69.....	168	216	+48	9-3	10-8	+15
70.....	246	228	-18	*	8-4	-
71.....	198	204	+ 6	4-7	10-8	+41
72.....	162	174	+12	6-7	*	-
73.....	162	198	+36	6-7	6-7	0
74.....	162	150	-12	8-4	4-7	-37
76.....	120	186	+66	9-3	4-7	-46
77.....	168	174	+ 6	4-7	6-7	+20
78.....	192	222	+30	*	8-4	-
80.....	168	198	+30	6-7	8-4	+17
81.....	246	186	-60	*	4-7	-
82.....	168	138	-30	6-7	6-7	0
83.....	126	162	+36	6-7	10-8	+41
84.....	228	348	+120	4-7	*	-
85.....	150	180	+30	*	4-7	-
86.....	78	66	-12	4-7	*	-
Mean....	189	207	-	-	-	-

Table 11. Changes in Reading Rate and Effect on Story Comprehension-Reading-Grade Average, 3P Corrective-Reading Pupils, Traxler Silent Reading Tests, Forms A and B.

Pupil number	Reading Rate			Story Comprehension-Grade Average		
	October, Form A	June, Form B	Change	October, Form A	June, Form B	Change, Months
(1)	(2)	(3)	(4)	(5)	(6)	(7)
45.....	300	240	-54	8-7	*	-
46.....	182	192	+50	10-8	12-7	+14
47.....	248	228	-12	9-3	10-8	+15
48.....	192	180	- 3	9-3	9-3	0
50.....	238	294	+66	6-7	9-3	+26
51.....	172	168	- 6	10-3	9-3	-15
52.....	210	228	+18	6-7	*	-
54.....	276	312	+30	9-4	*	-
55.....	238	258	+ 5	4-7	8-4	+37
58.....	132	144	+12	10-3	8-4	-24
60.....	138	186	+48	8-4	4-7	-37
62.....	222	270	+48	10-8	9-3	-15
65.....	228	308	+40	8-7	8-7	+20
66.....	180	192	+12	8-7	9-3	+26
67.....	180	204	+24	8-3	8-7	-17
68.....	138	144	+ 6	9-3	*	-
69.....	168	218	+42	9-3	10-8	+15
70.....	240	228	-12	*	8-3	-
71.....	198	204	+ 6	4-7	10-8	+41
72.....	162	174	+12	6-7	*	-
73.....	162	192	+30	6-7	8-7	0
74.....	162	150	-12	8-3	4-7	-37
76.....	120	180	+60	9-3	6-7	-46
77.....	168	174	+ 6	4-7	6-7	+20
78.....	192	222	+30	*	8-4	-
80.....	168	198	+30	8-7	8-4	+17
81.....	240	180	-60	*	8-7	-
82.....	186	144	-20	6-7	8-7	0
83.....	168	192	+24	6-7	10-8	+41
84.....	222	348	+120	4-7	*	-
85.....	180	180	+20	*	4-7	-
86.....	78	66	-12	4-7	*	-
Mean.....	188	207	-	-	-	-

polating. Such scores are indicated by an asterisk (*) in the table. Fifteen of this group improved their comprehension on the second test and 14 lowered their scores. Three were unchanged. Of the 15 with improved scores, 12 also speeded up their rate,--one as much as 66 words per minute. Of the 14 whose comprehension scores were lower on the second test, only four also had lower rates of reading.

While not especially conclusive, the above figures give considerable evidence of improvement in rate of reading,--improvement which can in part at least be attributed to the corrective-reading program.

Gains in comprehension.-- Another aim of the corrective instruction was to improve comprehension through training in the ability to get the central idea of a paragraph and in ability to find the supporting details. Table 8,(page 73) shows gains made by both the entire group and the corrective-reading groups.

The conditions under which the pupils read the selection on which their reading rate was measured were not ideal for measuring ability in comprehension. This is evidenced by the scores earned by several pupils which are so low that they cannot be expressed accurately as grade scores. Several such pupils have eighth and ninth grade comprehension scores on word meaning and paragraph meaning, as shown in Tables 2 and 12. Their low scores on comprehension of the long selection of course pull down their average comprehension scores. Hence a consideration of the comprehension scores earned on paragraph reading alone will furnish more reliable

pupils. Such scores are indicated by an asterisk (*) in the table. Fifteen of this group improved their comprehension on the second test and 14 lowered their score. Three were unchanged. Of the 15 with improved scores, 12 also speeded up their rate,--one as much as 66 words per minute. Of the 14 whose comprehension scores were lower on the second test, only four also had lower rates of reading.

While not especially conclusive, the above figures give considerable evidence of improvement in rate of reading,--improvement which can in part at least be attributed to the corrective-reading program.

Gains in comprehension.-- Another aim of the corrective instruction was to improve comprehension through training in the ability to get the central idea of a paragraph and in ability to find the supporting details. Table 4,(page 73) shows gains made by both the entire group and the corrective-reading groups.

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Table 12. Reading Rates and Comprehension-Grade Scores Made by the 32 Pupils in the Corrective-Reading Groups on the Traxler Silent Reading Test, Form 2, June 1, 1938.

Pupil Number	Reading Rate Words per Minute	Story Compre-hension	Word Compre-hension	Paragraph Compre-hension	Total Compre-hension	Total Score
(1)	(2)	(3)	(4)	(5)	(6)	(7)
45.....	246	*	9-4	8-8	8-5	8-9
46.....	192	12-7	9-6	9-5	9-9	9-6
48.....	228	10-8	8-9	9-5	9-4	9-6
49.....	186	9-3	9-4	11-5	10-0	9-6
50.....	294	9-3	8-2	8-8	8-7	9-8
51.....	186	9-3	10-7	9-5	10-0	9-6
53.....	228	*	8-5	8-8	8-2	8-4
54.....	312	*	9-4	8-8	8-3	9-5
55.....	264	8-4	8-9	8-3	8-5	9-0
58.....	144	8-4	11-7	11-5	10-9	9-7
60.....	186	4-7	8-1	8-8	8-2	7-8
62.....	270	9-3	7-6	10-8	9-0	9-9
65.....	306	6-7	7-6	8-3	7-9	9-0
66.....	192	9-3	8-7	8-8	8-8	8-6
67.....	204	6-7	6-9	9-5	8-3	8-2
68.....	144	*	9-4	11-5	9-3	8-5
69.....	216	10-8	8-0	10-8	9-4	9-4
70.....	228	8-4	10-4	8-8	9-4	9-6
71.....	204	10-8	8-9	8-5	8-9	8-8
72.....	174	*	8-7	8-8	8-3	7-7
73.....	198	6-7	10-7	9-5	9-6	9-4
74.....	150	4-7	8-5	11-5	9-0	8-3
76.....	186	4-7	6-1	8-3	6-9	6-6
77.....	174	6-7	7-8	8-3	8-0	7-3
78.....	222	8-4	8-5	9-6	8-9	9-0
80.....	198	8-4	8-5	9-0	8-7	8-6
81.....	186	4-7	6-1	9-0	7-6	7-2
82.....	138	6-7	7-4	8-8	8-1	6-9
83.....	162	10-8	9-9	8-3	9-2	8-6
84.....	348	*	7-4	7-3	6-9	8-9
85.....	180	4-7	6-1	8-3	6-9	6-5
86.....	66	*	7-4	7-3	6-4	4-2
Standard Score, June	220	9-9	9-9	9-9	9-9	9-9
Class Mean 82 Pupils	243.6	8-8	10-0	10-1	9-8	10-4

Table 12. Reading Rates and Comprehension-Grade Scores Made by the 32 Pupils in the Corrective-Reading Groups on the Traxler Silent Reading Test, Form 2, June 1, 1953.

Pupil Number	Reading Rate Words per Minute	Story Comprehension	Word Comprehension	Paragraph Comprehension	Total Comprehension	Total Score
(1)	(2)	(3)	(4)	(5)	(6)	(7)
45.....	246	*	2-4	8-8	8-6	5-0
46.....	102	12-7	9-8	9-0	9-0	9-8
47.....	228	10-8	8-0	8-5	8-4	8-6
48.....	188	8-3	9-2	11-8	10-0	9-2
50.....	264	9-8	8-2	8-8	8-7	8-0
51.....	188	8-8	10-7	8-8	10-0	9-2
52.....	220	*	8-5	8-0	8-2	8-4
54.....	312	*	9-4	8-4	8-8	9-8
55.....	204	8-4	8-9	8-7	8-8	9-0
56.....	184	8-4	11-7	11-8	10-8	9-7
60.....	140	4-7	8-1	8-8	8-2	7-0
62.....	270	8-3	7-6	10-0	8-0	8-2
63.....	204	8-7	7-8	8-3	7-9	8-0
65.....	102	8-8	9-7	8-8	8-8	8-6
67.....	204	8-7	8-9	8-8	8-8	8-2
68.....	144	*	9-4	11-8	8-8	9-0
69.....	216	10-8	8-0	10-0	8-4	9-4
70.....	228	8-4	10-4	8-0	8-4	8-6
71.....	204	10-2	8-9	8-8	8-0	8-8
72.....	174	*	8-7	8-8	8-8	7-7
73.....	108	8-7	10-7	8-8	8-8	8-4
74.....	180	4-7	8-9	11-8	8-0	8-8
76.....	186	4-7	8-1	8-8	8-8	8-6
77.....	174	8-7	7-4	8-8	8-0	7-8
78.....	222	8-4	8-8	8-4	8-8	8-0
80.....	180	8-4	8-8	8-0	8-7	8-8
81.....	186	4-7	8-1	8-0	7-8	7-2
82.....	138	8-7	7-4	8-8	8-1	8-8
83.....	186	10-8	8-1	8-8	8-2	8-6
84.....	348	*	7-4	7-8	8-0	8-8
85.....	120	4-7	8-1	8-8	8-8	8-6
86.....	84	*	7-8	7-8	8-4	4-8
Standard Score, Grade Level Norm	280	8-8	8-8	8-8	8-8	8-8
32 Pupils	245.8	8-8	10-0	10-1	9-8	10-4

information regarding the success of the corrective reading instruction in contributing to the second aim, (to improve comprehension). Table 13 shows the grade scores of each pupil in the corrective-reading groups in paragraph comprehension, as achieved on the October and June tests. Six of the 32 pupils scored losses,

Table 13. A Comparison of the Grade Scores Earned in Paragraph Comprehension on the Traxler Tests in October and June by the 32 Corrective-Reading Pupils.

Pupil Number	October	June	Change, Months	Pupil Number	October	June	Change, Months
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
45.....	8-5	8-8	3	69.....	9-0	10-8	18
46.....	11-5	9-5	-20	70.....	8-0	8-8	8
48.....	8-3	9-5	-12	71.....	8-5	8-5	0
49.....	9-5	11-5	20	72.....	8-5	8-8	3
50.....	10-1	8-8	-13	73.....	8-5	9-5	10
51.....	10-1	9-5	- 6	74.....	9-0	11-5	25
53.....	8-8	8-8	0	76.....	8-8	8-3	- 5
54.....	8-3	8-8	5	77.....	7-3	8-3	10
55.....	8-0	8-3	3	78.....	8-0	9-6	16
58.....	9-5	11-5	20	80.....	6-6	9-0	24
60.....	10-1	8-8	-13	81.....	7-3	9-0	17
62.....	8-8	10-8	20	82.....	8-0	8-8	8
65.....	8-5	8-3	- 2	83.....	8-0	8-3	3
66.....	8-3	8-8	5	84.....	5-8	7-3	15
67.....	9-5	9-5	0	85.....	7-3	8-3	10
68.....	10-1	11-5	14	86.....	7-3	7-3	0

four of them of considerable amount. Twenty-two show gains and four showed no change. Fourteen show gains appreciably in excess of possible gains due to maturation.

Gains in word meaning.-- A third aim set up for the corrective-reading program was that of improving vocabulary through training to develop a technique of word attack, training in the use of the

information regarding the success of the corrective reading instruction in comparison to the second one, (to improve comprehension). Table 12 shows the gains scores of each pupil in the corrective-reading groups in paragraph comprehension, as achieved on the October and June tests. Six of the 32 pupils scored lower.

Table 12. A Comparison of the Grade Scores Earned in Paragraph Comprehension on the Gray's Test in October and June by the 32 Corrective-Reading Pupils.

Pupil number (1)	October (2)	June (3)	Gained Number (1)	Gained Months (4)	October (5)	June (6)	Gained Months (7)
45.....	4-4	8-2	2	2	4-0	10-8	12
46.....	11-5	8-5	-20	20.....	8-0	7-0	8
43.....	6-7	9-9	-12	21.....	7-3	6-3	0
42.....	8-3	11-8	20	22.....	6-8	8-8	2
50.....	10-1	5-8	-12	23.....	8-5	9-5	10
31.....	12-1	8-8	- 8	24.....	9-0	11-5	25
53.....	9-3	8-8	0	25.....	5-6	8-3	- 3
54.....	6-8	5-8	5	27.....	7-8	8-2	10
55.....	8-0	8-8	3	28.....	5-0	8-6	10
58.....	8-6	11-6	20	30.....	8-2	9-0	24
60.....	10-1	8-8	-12	31.....	7-8	8-0	17
62.....	8-8	10-3	20	32.....	8-0	8-3	8
63.....	8-5	8-5	- 2	33.....	8-0	8-3	3
66.....	6-3	8-8	5	34.....	5-8	7-2	15
67.....	4-5	9-5	0	35.....	7-3	8-2	10
68.....	10-1	11-8	14	36.....	7-7	7-7	0

four of them of considerable amount. Twenty-two show gains and four showed no change. Fourteen show gains appreciably in scores of possibly value due to maturation.

Doing in word meaning.-- A third aim set up for the corrective-reading program was that of improving vocabulary through training to develop a knowledge of word meaning, starting in the use of the

dictionary, using useful word lists, and building an extensive reading background. Table 14 shows the scores made in October and June by each of the 32 corrective-reading pupils on the word meaning sub-test of the two forms of the Traxler Silent Reading Test. This table shows gains by 20 pupils ranging from two to 30 school months,

Table 14. A Comparison of the Grade Scores Earned in Word Comprehension on the Traxler Tests in October and June by the 32 Corrective-Reading Pupils.

Pupil Number	October	June	Change, Months	Pupil Number	October	June	Change, Months
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
45.....	8-2	9-4	12	69.....	7-2	8-0	8
46.....	8-7	9-6	9	70.....	7-4	10-4	30
48.....	9-1	8-9	- 2	71.....	7-8	8-9	11
49.....	9-1	9-4	3	72.....	8-5	8-7	2
50.....	8-0	8-2	2	73.....	7-8	10-7	29
51.....	8-0	10-7	27	74.....	6-1	8-5	24
53.....	9-3	8-5	- 8	76.....	7-6	6-1	-15
54.....	7-4	9-4	20	77.....	8-9	7-8	-11
55.....	9-3	8-9	- 4	78.....	8-3	8-5	2
58.....	9-3	11-7	24	80.....	8-5	8-5	0
60.....	9-3	8-1	-12	81.....	6-4	6-1	- 3
62.....	6-4	7-6	12	82.....	7-4	7-4	0
65.....	6-6	7-6	10	83.....	8-9	9-9	10
66.....	9-3	8-7	- 6	84.....	6-1	7-4	13
67.....	6-9	6-9	0	85.....	6-4	6-1	- 3
68.....	7-4	9-4	20	86.....	7-1	7-4	3

and losses by nine pupils running from two months to 15. The scores of three pupils were unchanged. According to Table 8, (page 73) the average gain in word meaning power for this group was seven school months. It was also seven school months for the entire class of 82. Greater gains were made in this phase of the corrective-reading program than in any of the other types of corrective-reading work.

dictionary, using useful word lists, and building an extensive reading background. Table 14 shows the scores made in October and June by each of the 22 corrective-reading pupils on the word meaning subtest of the two forms of the Traxler Silent Reading Test. This table shows gains by 20 pupils ranging from two to 30 school months.

Table 14. A Comparison of the Scores Scored in Word Comprehension on the Traxler Tests in October and June by the 22 Corrective-Reading Pupils.

Pupil Number (1)	October (2)	June (3)	Gains Months (4)	Pupil Number (1)	October (2)	June (3)	Gains Months (4)
45.....	8-2	9-4	12	57.....	7-2	8-0	3
46.....	8-7	9-0	3	70.....	7-4	10-4	30
43.....	9-1	8-9	- 2	71.....	7-0	8-9	11
49.....	9-1	8-4	3	72.....	9-3	8-7	2
50.....	8-0	8-2	2	73.....	7-8	10-7	29
71.....	8-0	10-7	27	74.....	8-1	8-5	24
83.....	9-3	8-5	- 8	76.....	7-8	8-1	-15
84.....	7-4	9-4	20	77.....	8-9	7-8	-11
85.....	9-3	8-9	- 4	78.....	8-2	8-5	3
86.....	9-3	11-7	24	80.....	8-5	8-5	0
88.....	9-3	8-1	-12	81.....	8-1	8-1	- 2
85.....	8-4	7-8	12	82.....	7-4	7-4	0
86.....	7-6	7-8	10	83.....	8-4	9-8	10
88.....	9-8	8-7	- 8	84.....	8-7	7-4	13
87.....	8-0	7-	0	85.....	8-4	8-1	- 3
85.....	7-1	8-1	20	86.....	7-1	7-4	3

and losses by nine pupils ranging from two months to 16. The scores of three pupils were unchanged. According to Table 5, (page 72) the average gain in word meaning power for this group was seven school months. It was also seven school months for the entire class of 82. Greater gains were made in this phase of the corrective-reading program than in any of the other types of corrective-reading work.

Gains in total-grade score.-- The Traxler test provides a plan for combining reading rate and the story, word, and paragraph comprehension scores into a single grade score. The writer has not placed much confidence in this total grade score, for a variety of reasons. In the first place, it is too easily affected by reading rate. Secondly, it includes too many factors to permit it to provide information which will help in locating reading strength and weaknesses. It should not be confused with the total comprehension score, which is obtained from the story comprehension, word meaning, and paragraph comprehension scores and which excludes scores on rate of reading. The total grade scores are included in this report in order to show, in a single measure, changes in average reading ability, and they should be interpreted with the fact in mind that they are too broad and too inclusive to have much value. (It will be recalled, in this connection, that Gates [1] has repeatedly stated that reading ability is not a single or general ability, but a number of specific abilities.)

The total grade scores made by each of the 32 corrective-reading pupils on the October and June tests are given in Table 15. Column 4 shows the changes in months made by each pupil. These changes vary from a loss of six months at one extreme to a gain of 24 months at the other extreme. The scores of only four pupils show losses. The average change is a gain of approximately eight school months. This figure is the largest of any of the average gains reported in terms

1/ The Improvement of Reading, Revised Edition. Op. cit., p.40.

Gains in total-grade scores.-- The Traxler test provides a plan for combining reading rate and the story, word, and paragraph comprehension scores into a single grade score. The writer has not placed much confidence in this total grade score, for a variety of reasons. In the first place, it is too easily affected by reading rate. Secondly, it includes too many factors to permit it to provide information which will help in locating reading strength and weaknesses. It should not be confused with the total comprehension score, which is obtained from the story comprehension, word meaning, and paragraph comprehension scores and which excludes scores on rate of reading. The total grade scores are included in this report in order to show, in a single measure, changes in average reading ability, and they should be interpreted with the fact in mind that they are too broad and too inclusive to have much value. (It will be recalled, in this connection, that Gates [1] has repeatedly stated that reading ability is not a single or general ability, but a number of specific abilities.)

The total grade scores made by each of the 62 corrective-reading pupils on the October and June tests are given in TABLE 15. Column 4 shows the changes in months made by each pupil. These changes vary from a loss of six months at one extreme to a gain of 24 months at the other extreme. The scores of only four pupils show losses. The average change is a gain of approximately eight school months. This figure is the largest of any of the average gains reported in terms

[1] The Improvement of Reading, Revised Edition. Op. cit., p.40.

of grade scores, and reflects the influence of increase in reading rate, which in other tables has been reported only in terms of words per minute. If this is a valid measure of general improvement in reading abilities, this group of 32 corrective-reading pupils has made, on the average, gains well in excess of the normal expectancy

Table 15. A Comparison of Total Grade Scores Earned on the Traxler Tests in October and June by the 32 Corrective-Reading Pupils.

Pupil Number	October	June	Change, Months	Pupil Number	October	June	Change, Months
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
45.....	9-3	8-9	- 4	69.....	8-0	9-4	+14
46.....	9-0	9-6	+ 6	70.....	7-7	9-6	+19
48.....	9-0	9-6	+ 6	71.....	7-7	8-8	+11
49.....	8-9	9-6	+ 7	72.....	7-6	7-7	+ 1
50.....	8-9	9-8	+ 9	73.....	7-3	9-4	+21
51.....	8-9	9-6	+ 7	74.....	7-2	8-3	+11
53.....	8-7	8-4	- 3	76.....	7-1	6-6	- 5
54.....	8-7	9-5	+ 8	77.....	7-1	7-3	+ 2
55.....	8-7	9-0	+ 3	78.....	7-0	9-0	+20
58.....	8-5	9-7	+12	80.....	6-9	8-6	+17
60.....	8-4	7-8	- 6	81.....	6-9	7-2	+ 3
62.....	8-4	9-9	+15	82.....	6-8	6-9	+ 1
65.....	8-2	9-0	+ 8	83.....	6-8	8-6	+18
66.....	8-1	8-6	+ 5	84.....	6-5	8-9	+24
67.....	8-0	8-2	+ 2	85.....	5-5	6-5	+10
68.....	8-0	8-5	+ 5	86.....	4-8	4-2	- 6
Average gain made by the 32 corrective-group pupils							7.5

for the duration of the study.

Studies of Scores Made by Individuals

Reading-achievement quotients.-- It was shown in Table 8 (page 73) that the gains made in general by the corrective-reading groups following instruction did not equal those made by the entire ninth-

of grade scores, and reflects the influence of increase in reading rate, which in other tables has been reported only in terms of words per minute. If this is a valid measure of general improvement in reading abilities, this group of 32 corrective-reading pupils has made, on the average, quite well in excess of the normal expectancy

Table 18. A Comparison of Total Grade Scores Earned on the Trachler Tests in October and June by the 32 Corrective-reading Pupils.

Pupil Number (1)	October (2)	June (3)	Change, Months (4)	Pupil Number (1)	October (2)	June (3)	Change, Months (4)
46.....	8-3	8-9	- 4	68.....	8-0	8-4	+14
47.....	8-0	8-8	+ 6	70.....	7-7	8-6	+19
48.....	8-0	9-8	+ 8	71.....	7-7	8-3	+11
49.....	8-9	9-5	+ 7	72.....	7-8	7-7	+ 1
50.....	8-8	9-8	+ 8	73.....	7-3	9-4	+21
51.....	8-6	9-6	+ 7	74.....	7-2	8-3	+13
52.....	8-7	8-4	- 3	75.....	7-1	6-0	- 8
54.....	8-7	9-5	+ 8	77.....	7-1	7-3	+ 2
55.....	8-7	9-0	+ 5	78.....	7-0	8-0	+20
58.....	8-5	9-7	+12	80.....	6-9	8-6	+17
60.....	8-4	7-8	- 8	81.....	6-9	7-3	+ 5
62.....	8-4	9-9	+15	82.....	6-8	6-9	+ 1
65.....	8-2	9-0	+ 8	83.....	6-8	8-8	+12
66.....	8-1	8-6	+ 5	84.....	6-6	8-0	+22
67.....	8-0	8-2	+ 2	85.....	6-4	8-5	+10
68.....	8-0	8-5	+ 5	86.....	6-3	4-3	- 6
Average gain made by the 32 corrective-group pupils							7.5

for the duration of the study.

Studies of Errors Made by Individuals

Reading-ability and quotients.-- It was shown in Table 6 (page 73) that the gains made in general by the corrective-reading groups following instruction did not equal those made by the entire class-

grade group, including 50 students who had received no reading instruction during the school year. In other words, the corrective groups made slower progress, even with the help of instruction, than the group as a whole, and consequently slower progress than those who did not receive instruction. This result is not surprising in view of the fact that the corrective groups were the slow readers. The groups included many pupils with low intelligence quotients. The median intelligence quotient of the corrective groups (32 pupils) on the Terman Group Test of Mental Ability was 98, and on the Stanford Revision of the Binet-Simon Test it was 88. It was pointed out on page 19 that the latter figure is probably a little lower than it should be. The median intelligence quotient of the entire ninth-grade class, as shown by the Terman test in December, was 108. Thus the group as a whole, and consequently the group not receiving corrective-reading instruction, was considerably superior to the corrective-reading groups. This probably explains, in part at least, why the corrective groups lagged behind the general group in average reading gains.

With the inferiority of the mental ability of the corrective-reading groups in mind, it seemed logical to determine, as well as could be done in a more or less mechanical fashion, how well these pupils were reading in comparison with what should be expected of them. One way to do this would be by means of reading-achievement quotients. Such a quotient is obtained by dividing the reading-grade score of the pupil by the grade (expressed in years and months, as

grade group, including 30 students who had received no reading instruction during the school year. In other words, the corrective groups made slower progress, even with the help of instruction, than the group as a whole, and noticeably slower progress than those who did not receive instruction. This result is not surprising in view of the fact that the corrective groups were the slow readers. The groups included many pupils with low intelligence quotients. The median intelligence quotient of the corrective groups (82 pupils) on the Terman Group Test of Mental Ability was 98, and on the Stanford Revision of the Binet-Simon Test it was 88. It was pointed out on page 19 that the latter figure is probably a little lower than it should be. The median intelligence quotient of the entire ninth-grade class, as shown by the Terman test in December, was 102. Thus the group as a whole, and consequently the group not receiving corrective-reading instruction, was considerably superior to the corrective-reading groups. This probably explains, in part at least, why the corrective groups lagged behind the general group in average reading gains.

With the inferiority of the mental ability of the corrective-reading groups in mind, it seemed logical to determine, as well as could be done in a more or less mechanical fashion, how well these pupils were reading in comparison with what should be expected of them. One way to do this would be by means of reading-achievement quotients. Such a quotient is obtained by dividing the reading-grade score of the pupil by the grade (expressed in years and months) on

grade 8.7) to which the pupil's mental age corresponds. For example, in December, pupil 45 had a mental age of 14 years 5 months, corresponding to a grade placement of 8.7. This pupil's grade score in reading on the Traxler test in December was 8.3. 8.3 divided by 8.7 gives a quotient of 0.96. Hence this pupil's reading-achievement quotient was 96. In June her reading-achievement quotient was 92. She should have made much greater gains in reading than she did.

Reading-achievement quotients were obtained for the 32 pupils who completed the corrective-reading program for both their December and their June tests. In computing the June reading-achievement quotients, it was necessary to adjust the mental ages; this was done by adding to the December mental ages the product of six months and the decimal fraction representing their Binet intelligence quotients, using the product to the nearest whole month. Table 16 shows the results. Grade designations in columns (4) and (7) were obtained by using the table prepared by Gates [1] for translating age scores into grade scores.

The table shows that in December only four of these 32 pupils had reading-achievement quotients below 100, and that the median reading-achievement quotient was 115. In June six pupils had reading-achievement quotients below 100, and the median reading-achievement quotient was 112.5. If the Binet intelligence quotients for the group are somewhat too low, as suggested previously, the achievement quotients would drop accordingly if the higher intelligence quotients

1/ Arthur I. Gates, The Improvement of Reading, Revised Edition. The Macmillan Company, New York, 1936. p. 604.

grade 6.7) to which the pupil's mental age corresponds. For example, in December, pupil 16 has a mental age of 14 years 5 months, corresponding to a grade placement of 8.7. This pupil's grade score in reading on the Traxler test in December was 6.5. 6.5 divided by 8.7 gives a quotient of 0.88. Hence this pupil's reading-achievement quotient was 88. In June her reading-achievement quotient was 92. She should have made much greater gains in reading than she did.

Reading-achievement quotients were obtained for the 32 pupils who completed the corrective-reading program for both their December and their June tests. In computing the June reading-achievement quotients, it was necessary to adjust the mental ages; this was done by adding to the December mental ages the product of six months and the decimal fraction representing their first intelligence quotients, using the product to the nearest whole month. Table 16 shows the results. Grade designations in columns (4) and (7) were obtained by using the table prepared by Oates [1] for translating age scores into grade scores.

The table shows that in December only four of these 32 pupils had reading-achievement quotients below 100, and that the median reading-achievement quotient was 112. In June six pupils had reading-achievement quotients below 100, and the median reading-achievement quotient was 112.5. If the first intelligence quotients for the group are somewhat too low, as suggested previously, the achievement quotients would drop accordingly if the higher intelligence quotients

[1] Oates, W. Nelson. The Improvement of Reading. Revised Edition. The Macmillan Company, New York, 1938. p. 509.

Table 16. Reading-Achievement Quotients for December and June, and Their Derivation, for the 32 Pupils Completing the Corrective-Reading Program.[a]

Pupil Number	Binet I.Q.	Binet M.A. December	Grade for December M.A.	Total Comprehension Score Traxler December	Reading A.Q. December	Grade for June M.A.	Total Comprehension Score Traxler June	Reading A.Q. June	Change in A.Q.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
45....	101	14-5	8.7	8.3	96	9.2	8.5	92	- 4
46....	109	14-10	9.1	9.8	108	9.6	9.9	103	- 5
48....	91	13-7	7.8	8.7	112	8.2	9.4	115	+ 3
49....	98	13-8	7.9	9.3	118	8.4	10.0	119	+ 1
50....	92	13-2	7.4	8.7	118	7.9	8.7	110	- 8
51....	78	11-9	6.0	9.2	153	6.4	10.0	156	+ 3
53....	92	13-7	7.8	8.7	112	8.3	8.2	99	-13
54....	89	13-11	8.2	8.0	98	8.6	8.3	97	- 1
55....	90	13-0	7.2	8.2	114	7.7	8.5	110	- 4
58....	98	14-8	8.9	9.6	108	9.4	10.9	116	+ 8
60....	93	13-10	8.1	9.4	116	8.6	8.2	95	-21
62....	82	12-10	7.1	8.3	117	7.5	9.0	120	+ 3
65....	71	11-3	5.4	7.4	139	5.8	7.9	136	- 3
66....	81	12-5	6.7	8.5	127	7.1	8.8	124	- 3
67....	85	12-10	7.1	8.4	118	7.5	8.3	111	- 7
68....	101	14-3	8.5	8.8	104	9.0	9.3	103	- 1
69....	82	12-6	6.8	8.5	125	7.2	9.4	131	+ 6
70....	73	10-9	5.0	7.0	140	5.2	9.4	181	+41
71....	100	13-8	7.9	8.0	101	8.4	8.9	106	+ 5
72....	84	12-9	7.0	8.3	119	7.3	8.3	114	- 5
73....	94	13-1	7.3	8.1	111	7.8	9.6	123	+12
74....	94	13-5	7.7	8.1	105	8.2	9.0	110	+ 5
76....	84	12-1	6.3	8.5	135	6.8	7.0	103	-32
77....	72	10-11	5.1	7.9	155	5.4	8.0	148	- 7
78....	98	14-1	8.3	7.2	87	8.8	8.9	101	+14
80....	85	12-0	6.2	7.6	123	6.7	8.7	130	+ 7
81....	97	14-5	8.7	6.0	69	9.2	7.6	83	+14
82....	81	11-8	5.9	7.5	127	6.3	8.1	129	+ 2
83....	90	13-0	7.2	8.2	114	7.7	9.2	119	+ 5
84....	72	11-8	5.9	5.9	100	6.2	6.9	111	+11
85....	69	11-0	5.1	6.2	122	5.5	6.9	125	+ 3
86....	80	12-4	6.6	6.9	105	7.0	6.4	91	-14
Median	88	-	-	-	115	-	-	112.5	-2.5

a/ I.Q. = intelligence quotients; M.A. = mental ages; A.Q. = achievement quotients.

Table 12. Reading-Achievement quotients for December and June, and their Derivation, for the 32 Pupils Completing the Corrective-Reading Program.[a]

Pupil number	Mental age in M.A.	Grade-age for M.A.	Standard score for December	Total Comprehension score Pupil's December	Reading-age score for December	Grade-age for June	Total Comprehension score Pupil's June	Reading-age score for June	Change in Q.A.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
45....	107	14-6	6.7	5.3	92	5.2	6.5	92	- 4
46....	109	14-10	7.1	6.5	102	5.5	7.0	108	- 8
49....	91	13-7	7.5	6.7	112	6.2	5.4	115	+ 3
49....	96	13-8	7.6	6.5	118	5.4	10.0	119	+ 1
50....	82	13-2	7.4	6.7	124	7.2	8.7	120	- 5
51....	73	12-8	6.0	5.2	103	5.4	10.0	156	+ 8
53....	72	13-7	7.8	8.7	118	5.5	8.2	98	-13
54....	88	13-11	8.2	6.0	93	6.5	8.2	97	- 1
55....	80	13-0	7.8	5.3	114	7.7	5.5	110	- 4
58....	98	14-0	8.0	5.6	108	5.4	10.9	118	+ 3
60....	93	13-10	8.1	8.4	118	5.5	6.2	95	-21
62....	82	13-10	7.1	8.2	117	7.5	5.0	120	+ 3
63....	71	13-2	5.4	7.4	123	5.8	7.9	132	- 3
65....	91	13-5	8.7	8.5	127	7.1	8.8	124	- 3
67....	85	13-10	7.1	5.4	118	7.5	8.2	111	- 7
68....	101	14-3	8.3	5.5	106	5.0	9.2	103	- 1
69....	92	13-6	8.8	8.5	134	7.2	9.4	131	+ 6
70....	73	13-3	6.0	7.0	140	5.2	8.1	107	+41
71....	100	13-3	7.0	8.0	101	8.4	6.9	105	+ 5
72....	84	13-0	7.0	8.5	110	7.5	8.7	114	- 8
73....	94	13-1	7.5	8.1	111	7.0	5.0	125	+12
74....	94	13-8	7.7	8.1	105	8.2	8.0	110	+ 5
76....	94	13-1	8.0	8.3	135	8.5	7.0	102	-32
77....	72	13-11	5.1	7.9	135	5.4	8.0	140	- 7
78....	82	14-1	8.3	7.5	87	4.8	6.9	101	+14
80....	83	13-0	8.2	7.8	125	8.7	8.7	130	+ 7
81....	97	14-8	8.7	8.0	80	8.2	7.8	88	+14
82....	81	14-8	5.4	7.5	127	8.5	8.1	129	+ 2
83....	90	13-0	7.2	8.2	114	7.7	8.2	112	+ 5
84....	72	14-3	6.0	8.8	105	8.2	5.0	111	+11
85....	89	14-0	8.1	8.1	125	8.2	8.9	129	+ 3
86....	94	13-4	8.4	8.0	105	7.0	8.4	91	-14
Median	88	-	-	-	112	-	-	112.5	-2.5

[a] I.Q. = Intelligence quotient; M.A. = mental age; Q.A. = achievement quotient.

were used. It must be recognized, also, that it would be very unsound practice to place complete reliance on the results of a single reading test. This fact is illustrated by pupil 78, whose reading achievement quotient dropped 32 points between December and June. A difference of 2.5 points, as shown by the group medians for December and June, has little significance, however.

After making due allowance for the possibility that the Binet intelligence quotients of the corrective-reading groups may be a little too low, it still seems obvious that most of these students are reading very well in comparison to what should be expected of them. This probability may account for their failure to make a better showing in the results of the corrective-reading work.

Corrective pupils with high and low intelligence quotients.-- The corrective-reading groups contained seven pupils with Binet intelligence quotients of 98 or higher. They are pupils 45, 46, 49, 58, 68, 71, and 78. Table 17 shows their test scores, both at the beginning and at the close of the study. These seven pupils have an average total comprehension gain of eight school months, according to the grade scores of the Traxler tests, while the entire group of 82 who remained throughout the experiment gained only five months and the 32 corrective-reading pupils averaged a gain of only four months. Five of these seven pupils also increased their rate of reading. While these figures involve too few cases to prove anything with finality, they do indicate that the corrective-reading program as used in this study can produce good results with fairly bright pupils.

were used. It must be recognized, also, that it would be very unsound practice to place complete reliance on the results of a single reading test. This fact is illustrated by pupil 78, whose reading achievement quotient dropped 32 points between December and June. A difference of 2.5 points, as shown by the group medians for December and June, has little significance, however.

After making due allowance for the possibility that the slight intelligence quotients of the corrective-reading group may be a little too low, it still seems obvious that most of these students are reading very well in comparison to what should be expected of them. This probability may account for their failure to make a better showing in the results of the corrective-reading work.

Corrective pupils with high and low intelligence quotients.-- The corrective-reading group contained seven pupils with first intelligence quotients of 98 or higher. They are pupils 43, 46, 49, 58, 60, 71, and 73. Table IV shows their test scores, both at the beginning and at the close of the study. These seven pupils have an average total comprehension gain of eight school months, according to the grade scores of the Traxler tests, while the entire group of 22 who remained throughout the experiment gained only five months and the 32 corrective-reading pupils averaged a gain of only four months. Five of these seven pupils also increased their rate of reading. While these figures involve too few cases to prove anything with finality, they do indicate that the corrective-reading program as used in this study can produce good results with fairly bright pupils.

Table 18 (page 93) shows corresponding figures for the six pupils with Binet intelligence quotients below 80. It will be noted that they made average gains in total comprehension of nine school months. Thus the corrective-reading program was effective with the poorer types of pupils.

Tables 17 and 18 indicate that the ineffectiveness of the cor-

Table 17. Reading Rates and Comprehension-Grade Scores Made on the Traxler Tests by the Seven Corrective-Reading Pupils Having Intelligence Quotients of 98 or Better.[a]

Pupil Number	I.Q.	Fall Scores					June Scores					Gain, Total Comprehension Months
		Rate	Comprehension				Rate	Comprehension				
			Story	Word	Par.	Total		Story	Word	Par.	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
45....	101	300	7.0	8.3	8.5	8.3	246	*	9.4	8.8	8.5	2
46....	109	162	10.8	8.7	10.9	9.8	192	10.9	9.6	9.5	9.9	1
49....	98	192	9.3	9.1	9.5	9.3	186	9.3	9.4	10.9	10.0	7
58....	98	132	10.8	9.3	9.5	9.5	144	8.4	10.9	10.9	10.9	14
68....	101	138	9.3	7.4	10.1	8.8	144	*	9.4	10.9	9.3	5
71....	100	198	*	7.8	8.5	8.0	204	10.8	8.9	8.5	8.9	9
78....	98	192	*	8.2	8.0	7.2	222	8.4	8.5	9.5	8.9	17
Average gain in total comprehension by above pupils.....												8
Average gain in total comprehension by all 82 pupils.....												5
Average gain in total comprehension by 32 corrective pupils.....												4

a/ I.Q. = intelligence quotients.

rective-reading program with some pupils was not inherent within the program itself. Pupil attitudes toward school work, pupil-teacher relationships, home and other environmental conditions, and other circumstances may have been factors. The comment of Hovious [1] that

1/ Carol Hovious, Teacher's Manual for Following the Printways. D. C. Heath and Company, New York, 1938. p. vii.

Table 18 (page 92) shows corresponding figures for the six pupils with first intelligence quotients below 80. It will be noted that they made average gains in total comprehension of nine school months. Thus the corrective-reading program was effective with the poorer types of pupils.

Tables 17 and 18 indicate that the instructiveness of the cor-

Table 17. Reading Rates and Comprehension-Tests Scores Made on the Traxler Tests by the Seven Corrective-Reading Pupils Having Intelligence Quotients of 90 or Better.[a]

Pupil Number	I.Q.	Rate	Pre-Test Comprehension Story	Word	Par.	Total	Post-Test Comprehension Rate	Story	Word	Par.	Total	Gain, Total Comprehension Months
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
45....	101	300	9.0	8.3	8.0	8.3	246	*	9.4	9.2	9.5	2
46....	109	142	10.8	9.7	10.0	9.8	132	10.0	8.6	8.5	8.4	1
49....	98	142	9.3	9.1	9.8	9.3	138	9.3	9.4	10.8	10.0	7
88....	92	132	10.0	8.5	9.8	9.8	144	8.4	10.9	10.9	10.9	14
89....	101	129	8.3	7.4	10.0	8.6	144	*	9.4	10.9	9.5	8
72....	100	124	*	7.8	8.5	8.0	204	10.8	8.7	8.5	8.3	9
73....	98	102	*	8.2	8.0	7.5	222	8.4	8.5	9.3	8.9	17
Average gain in total comprehension by above pupils.....												6
Average gain in total comprehension by all 22 pupils.....												6
Average gain in total comprehension by 22 corrective pupils.....												4

a/ I.Q. = intelligence quotients.

rective-reading program with some pupils was not inherent in the program itself. Rural attitudes toward school work, pupil-teacher relationships, home and other environmental conditions, and other circumstances may have been factors. The moment of decision [1] about

1/ Carol Novinos, Teacher's Manual for Building the Friendship. N. C. Rand and Company, New York, 1938. p. vii.

bright pupils make reading gains twice as great as pupils having intelligence quotients below 100 adds further significance to these gains.

Table 18. Reading Rates and Comprehension-Grade Scores Made on the Traxler Tests by the Six Corrective-Reading Pupils Having Intelligence Quotients Below 80.[a]

Pupil Number	I.Q.	Fall Scores					June Scores					Gain, Total Comprehension Months
		Rate	Comprehension				Rate	Comprehension				
			Story	Word	Par.	Total		Story	Word	Par.	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
51....	78	192	10.8	8.0	10.0	9.2	186	9.3	10.6	9.8	10.0	8
65....	71	258	*	6.6	8.5	7.4	306	7.0	7.6	8.3	7.9	5
70....	73	246	*	7.8	8.0	7.0	228	8.4	10.4	8.8	9.4	24
77....	72	168	*	8.9	7.3	7.9	174	7.0	7.8	8.3	8.0	1
84....	72	228	*	6.1	5.8	5.9	348	*	7.4	7.3	6.9	10
85....	69	150	*	6.4	7.3	6.2	180	*	6.1	8.3	6.9	7
Average gain in total comprehension by above pupils.....												9
Average gain in total comprehension by all 82 pupils.....												5
Average gain in total comprehension by 32 corrective pupils.....												4

a/ I.Q. = intelligence quotients.

Independent Reading

Free reading.-- In accordance with the plan outlined in Chapter II (pages 26-28), the corrective-reading group members were encouraged to do as much independent reading as they could find time for, throughout the 20 weeks' duration of the experimental phase of the study. Most of this free reading consisted of material in book form, but a few pupils reported on magazine articles. Pupil

bright pupils make reading gains twice as great as pupils having intelligence quotients below 100 and a further significance to these gains.

Table 13. Reading Rates and Comprehension-Grade Scores Made on the Traxler Tests by the Six Corrective-Reading Pupils Having Intelligence Quotients Below 80.[a]

Pupil Number	I.Q.	Rate	Fall Scores: Comprehension: Score	Word	Year.	Total	Rate	Spring Scores: Comprehension: Story	Word	Year.	Total	Gain, Total Comprehension Months
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
51....	78	102	10.0	8.0	10.0	9.2	120	8.5	10.5	9.5	10.0	3
68....	71	128	*	8.5	8.5	7.4	200	7.0	7.5	8.5	7.5	5
70....	75	256	*	7.5	8.0	7.0	220	6.5	10.5	8.5	8.5	24
77....	72	128	*	8.5	7.5	7.9	174	7.0	7.5	8.5	8.0	1
84....	72	288	*	8.1	5.5	6.9	240	*	7.5	7.5	8.0	10
86....	69	180	*	6.4	7.5	6.8	180	*	8.1	8.5	8.3	7
Average gain in total comprehension by above pupils.....												9
Average gain in total comprehension by all 82 pupils.....												8
Average gain in total comprehension by 32 corrective pupils.....												6

a/ I.Q. = intelligence quotients.

Independent Reading

Free reading.-- In accordance with the plan outlined in Chapter II (pages 26-28), the corrective-reading group teachers encouraged in them an urge independent reading as they could find time for, throughout the 20 weeks' duration of the experimental phase of the study. Most of this free reading correlated or material in book form, but a few pupils reported on magazine articles. Pupil -

number 81 reported on 20 magazine articles and only seven books. Even though these shorter selections may have been just as valuable for the purpose in mind as the book-length materials, they were excluded from the figures shown in the following table. Hence the report on independent reading shows the number of books read and makes no reference to magazine articles.

Due to the difficulty of satisfactory tabulation, and to the ready availability of material in book form, the instruction emphasized the reading of books rather than magazine articles. With the exception of pupil 81, no pupil reported more than one magazine article, and hence their exclusion from the tabulation is of little importance.

Types of material read.-- As was to be expected, the quality of books read varied from standard authors to trashy material. Little of it could be ranked as vicious and harmful, however. Both boys and girls reported on stories detailing athletic prowess. Books such as the Alger stories were occasionally read by the boys, while many typical girls' stories, such as Brown's "Her Sixteenth Year" and "Two College Girls", were reported by girls. Zane Grey was popular with both boys and girls. Many titles of what might be termed modern standard fiction, by such writers as Kathleen Norris, Robert W. Chambers, Gene Stratton Porter, and Booth Tarkington, were listed. Louisa May Alcott occasionally scored.

Some of the books read would have to be classed as juvenile fiction, but a surprisingly large number of them was on the adult

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Types of material read.-- As was to be expected, the quality of books read varied from standard authors to trashy material. Little of it could be ranked as virtuous and beneficial, however. Both boys and girls reported on stories detailing athletic prowess. Books such as the Alger stories were occasionally read by the boys, while many typical girls' stories, such as Browne's "Bar Sixteenth Year" and "Two College Girls", were reported by girls. Zane Grey was popular with both boys and girls. Many titles of what might be termed modern standard fiction, by such writers as Kathleen Norris, Robert W. Chambers, Dana Burnetson Porter, and Booth Tarkington, were listed. Louisa May Alcott occasionally scored.

Some of the books read would have to be classed as juvenile fiction, but a surprisingly large number of them were on the adult

level. Many pupils showed preferences for certain authors and would read all the books of a particular author that they could find. For example, pupil 68, a girl, read five books by Kathleen Norris, three by Temple Bailey, two by Ethel M. Dell, two by Helen Porter, and six by miscellaneous authors. Of the 16 books ready by pupil 50, a boy, nine were written by Zane Grey. Other pupils rarely read more than one book by a given author. Pupil 73, a girl, read 15 books, with only one author appearing more than once, and that one only twice. No general trend in reading tastes can be discerned in these reading reports. When it is recalled that the pupils were in no way restricted in their choice of books, the general quality of their reading material is probably as high as that likely to be chosen by a representative cross-section of the adult population. Much of the credit for this can probably be given to the guidance of the public library.

Numbers of books read.-- The number of books read by each member of the corrective-reading groups is shown in Table 19. This table also shows the source of their reading material, as indicated by them on the book reports.

This group of 32 students read an average of 9.8 books per pupil. The median number was six. Four read more than 20 books each, while four boys failed to report the reading of any books. In all, seven pupils, of whom five were boys, read two books or less each during the twenty weeks' period.

Sources of reading material.-- Columns 4, 5, 6, and 7 of Table 19

Table 19. Number of Books Reported as Read by Each of the 32 Corrective-Reading Group Members, December 1, 1937 to June 1, 1938.

Pupil Number	Sex	Number of Books Read	Source of Books			
			Home	School Library	Public Library	Borrowed
(1)	(2)	(3)	(4)	(5)	(6)	(7)
45.....	F	4	0	0	4	0
46.....	M	6	2	0	4	0
48.....	F	40	5	0	35	0
49.....	F	27	6	0	21	0
50.....	M	16	5	0	10	1
51.....	M	8	7	1	0	0
53.....	F	54	0	0	52	2
54.....	M	7	6	0	1	0
55.....	M	0	0	0	0	0
58.....	F	5	0	0	5	0
60.....	F	13	0	0	13	0
62.....	M	3	0	0	0	3
65.....	F	6	0	0	5	1
66.....	F	1	0	0	1	0
67.....	F	8	0	0	7	1
68.....	F	18	0	0	17	1
69.....	M	0	0	0	0	0
70.....	F	22	0	0	22	0
71.....	M	2	0	0	2	0
72.....	F	8	0	1	7	0
73.....	F	15	1	4	9	1
74.....	F	4	0	1	2	1
76.....	M	17	12	0	1	4
77.....	F	4	0	0	4	0
78.....	F	4	0	0	4	0
80.....	F	3	3	0	0	0
81.....	M	7	2	2	3	0
82.....	F	7	0	0	7	0
83.....	M	4	3	0	1	0
84.....	M	0	0	0	0	0
85.....	F	2	1	0	1	0
86.....	M	0	0	0	0	0
Total.....	-	315	53	9	238	15
Per Cent.....	-	100	16.8	2.9	75.6	4.8
Average per pupil.....	-	9.8	1.7	-	7.4	-

show the source of the books read by the corrective-reading groups. As would be expected, the largest percentage of the total number was secured at the public library. Books in the homes furnished almost one-fifth of the whole number, and it was from this group that the more trashy books came. Books borrowed, as shown in column 7, undoubtedly represent in most cases books owned in the homes.

The small part played by the school library in furnishing sources of reading materials for independent reading is shown in column 5 of Table 19. The high-school library in this case is reasonably well equipped with reference books in the content subjects, but due to the accessibility of the public library, no serious attempt has been made to build up the fiction section. It has been the policy, rather, to use available funds for reference and source materials in the various specialized fields. This fact explains, of course, the small part played by the high-school library in the reading reported in this study.

Timidity seems to have been a factor in the free reading of several boys. Some boys are bashful about going to the public library. It will be noted (Table 19) that pupil 51, a boy, reported on eight books, but none of them came from the public library. Another boy, pupil 54, secured only one of his seven books at the public library. A third boy, pupil 76, read 17 books, of which only one came from the public library. It would be interesting to know how much of a factor bashfulness was in the failure of four boys to read any books. Certainly the school's failure in getting

them to go to the public library is unfortunate.

Free reading and growth in reading skills.-- It is impossible to segregate the effect of the free reading on reading ability from the effect of the group instruction in reading skills, under the conditions of this study. Some clues as to its effect can possibly be found from an examination of gains made by pupils who read extensively, however. Pupil 53 read 54 books but showed no growth in reading comprehension when her scores on the two forms of the Traxler test are compared. Her reading rate increased from 210 to 228 words per minute. Pupil 48, who read 40 books, made gains of seven school months in total comprehension and of 12 school months in paragraph comprehension, but dropped her reading rate from 246 to 228 words per minute. Pupil 49, with 27 books to her credit, made a gain of seven school months in total comprehension and over 14 school months in paragraph comprehension. She decreased her rate of reading from 192 to 186 words per minute. Pupil 70 reported reading 22 books. She increased her total comprehension score 24 school months and her paragraph-comprehension score eight school months. Her rate of reading dropped from 246 to 228 words per minute. Pupil 76 read 17 books, but his scores in June were lower in all types of comprehension than they were in the fall. His rate of reading increased from 120 to 186 words per minute, which may have a bearing on his lowered comprehension. Pupil 50 read 16 books, jumped his reading rate from 228 to 294 and scored the same in total comprehension in June that he did in the pre-

time to go to the public library is unfortunate.

Free reading and growth in reading ability.-- It is impossible to measure the effect of the free reading on reading ability from the effect of the group instruction in reading ability, under the conditions of this study. Some clues as to the effect can possibly be found from an examination of pupils made by pupils who read separately, however. Pupil 32 read 34 books but showed no growth in reading comprehension when her scores in the two forms of the Traxler test are compared. Her reading rate increased from 210 to 240 words per minute. Pupil 18, who read 40 books, made gains of seven school months in total comprehension and 12 school months in paragraph comprehension, but dropped her reading rate from 240 to 224 words per minute. Pupil 44, with 27 books to her credit, made a gain of seven school months in total comprehension and over 14 school months in paragraph comprehension. She decreased her rate of reading from 182 to 160 words per minute. Pupil 70 reported reading 22 books. She increased her total comprehension score 24 school months and her paragraph-comprehension score eight school months. Her rate of reading dropped from 248 to 220 words per minute. Pupil 76 read 17 books, but his scores in June were lower in all types of comprehension than they were in the fall. His rate of reading increased from 120 to 188 words per minute, which may have a bearing on his lowered comprehension. Pupil 60 read 16 books, dropped his reading rate from 232 to 224 and scored the same in total comprehension in June that he did in the pre-

ceding fall.

All of the scores given above were made on the two forms of the Traxler Silent Reading Test. It is sufficient to say that no definite influence of extensive reading during the six months covered by this study can be detected in the Traxler test scores earned by those pupils who read the largest number of books. This is in agreement with a study reported by McCullough,[1] but it contradicts reports of other studies.[2] Pupil 69, who read no books during the period, increased his reading speed on the Traxler test from 168 to 216 words per minute, his story-comprehension score 15 school months, his word-comprehension score eight school months, and his paragraph-comprehension score 18 school months--gains greater than those made by most of the pupils who engaged in extensive independent reading.

1/ Constance McCullough, "Improving Comprehension in Grade IX". The School Review (April, 1937) 45: 272.

2/ Dudley Miles, "The Contributions of Research to Teaching and Curriculum Making in English, June, 1935 through June, 1937". The English Journal (June, 1938) 27: 501.

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All of the scores given above were made on the two forms of the Traxler Silent Reading Test. It is sufficient to say that no definite influence or objective reading during the six months covered by this study can be detected in the Traxler test scores earned by those pupils who read the largest number of books. This is in agreement with a study reported by Moffitt,[1] but it contradicts reports of other studies.[2] Pupil 4A, who read no books during the period, increased his reading speed on the Traxler test from 168 to 216 words per minute, his story-comprehension score 15 school months, his word-comprehension score eight school months, and his paragraph-comprehension score 19 school months--quite greater than those made by most of the pupils who engaged in extensive independent reading.

1/ Jennings Moffitt, "Improving Comprehension in Grade IX". The School Review (April, 1937) 45: 277.

2/ Dorothy Miles, "The Contributions of Research to Teaching and Curriculum Making in English, June, 1938 through June, 1939". The English Journal (June, 1939) 28: 501.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

The study.-- Changing conditions in American life have resulted in keeping in school practically all children until they are at least sixteen years old. This situation has brought into the secondary schools in large numbers a type of pupil who would have rarely been found in the high school of a generation ago. One of his characteristic traits is a low ability in reading, which handicaps him in nearly all kinds of school work. Figures show that today the typical high school enrolls a comparatively high percentage of pupils whose reading ability is below seventh grade level.

Many of the larger high schools are employing teachers specially trained in the techniques of teaching remedial and corrective reading. They are providing special class time and small group instruction for their retarded readers. While such a program is the ideal one, it is beyond the reach of the small high school. The typical small high school cannot afford to provide the specialized type of teaching which is needed. Yet it must not allow the problem to continue unsolved if it is to fulfil its obligation to society.

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In an attempt to find at least a partial solution to the

reading problem in a small high school, it was decided to administer a corrective-reading program to the poor readers of the ninth grade. This grade consisted of 86 students, of various racial origins. The group ranged from 13 years 4 months to 16 years 7 months in age at the start of the study. The median intelligence quotient of the group, as determined by the Terman Group Test of Mental Ability, was 108.

Since no teacher trained in remedial-reading techniques was available, and since funds for such a teacher could not be had, it was decided to work the corrective-reading instruction into the English classes. Teaching time for the reading work was consequently at a premium, so all thoughts of any great amount of corrective-reading work on an individual basis were abandoned, and only group work planned.

All pupils in grade nine were given the Traxler Silent Reading Test, Form 1, on October 18, 1937, the Haggerty Reading Examination, Sigma 3: Form A on November 8, and the Terman Group Test of Mental Ability, Form B, on December 8. All who failed to reach either the class mean score on the Traxler test or the class median score on the Haggerty test were selected for corrective-reading instruction. During December and January the 33 pupils thus selected were given the Stanford Revision of the Binet-Simon Test.

On December 1, the corrective-reading instruction was started. The 86 ninth-grade pupils had been divided into three English sections, and some corrective-reading pupils were found in all three

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All pupils in grade nine were given the Traxler Silent Reading Test, Form 1, on October 14, 1937, the Gilmerty Reading Examination, Alpha 2: Form A on November 8, and the Terman Group Test of Mental Ability, Form A, on December 6. All who ranked in the lowest quarter on the Traxler test or the Alpha median score on the Gilmerty test were selected for corrective-reading instruction. During December and January the 28 pupils thus selected were given the Stanford Revision of the Binet-Simon Test.

On December 1, the corrective-reading instruction was started. The 80 ninth-grade pupils had been divided into three English sections, and some corrective-reading pupils were found in all three

groups. Ready made materials were used for the corrective-reading work and on an average the last 15 minutes of the English class period three days weekly were devoted to this purpose. While this was going on, those members of the classes not in the corrective-reading groups worked silently by themselves.

Aims of the instruction set up were: (a) to improve rate of reading and training pupils to use judgment in adjusting rate to the purpose and type of reading to be done; (b) to improve comprehension through training in ability to get the main idea of a selection or paragraph, and in ability to find the supporting details; and (c) to improve vocabulary through a variety of devices and activities. Besides the group corrective work, pupils were urged to read widely books of their own choice and to make brief reports on books read. A survey of their reading interests had revealed in many individuals a meagre reading background, which it was hoped the free reading might help to counteract.

Plans were made to measure gains in reading skills by using equivalent forms of the two reading tests at the conclusion of the study on June 1, 1938. During December and January, the writer held individual conferences with the 33 corrective-reading pupils, for a two-fold purpose. He wished to get the pupils into a favorable mind-set toward the corrective-reading program. He also wished to learn as much as he could about their reading interests, attitudes, and deficiencies. Several individual tests were used to aid the second purpose.

groups. Daily made materials were used for the corrective-reading work and on an average two to three hours of the English class period three days weekly were devoted to this purpose. While this was going on, those members of the classes not in the corrective-reading groups worked silently by themselves.

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Plans were made to measure gains in reading ability by using equivalent forms of the two reading tests at the conclusion of the study on June 1, 1933. During December and January, the writer held individual conferences with the 30 corrective-reading pupils, for a two-fold purpose. He wished to get the pupils into a favorable mind-set toward the corrective-reading project. He also wished to learn as much as he could about their reading interests, attitudes, and dexterities. Several inventoried tests were used to aid the second purpose.

All instructional work was done by the regular English teacher, and all group tests except intelligence tests were administered by her. The corrective-reading work required considerable extra effort on her part, but it was the intention to plan it so that the regular English work would not be weakened. Conferences between the English teacher and the writer were held from time to time in planning the work.

The literature of remedial and corrective reading was reviewed. The historical researches of Smith yielded much background material for the study. The scientific researches of investigators like Gates, Monroe, and Durrell were reviewed, and the applications of some of the results of these researches to the secondary-school level by McCallister, Hovious, and others, were studied. Numerous reports from teachers in the field, appearing in periodical literature, were gone over.

The teaching of remedial and corrective reading at the secondary-school level is still a largely unexplored field. There is considerable scientific evidence, however, that remedial and corrective materials consisting of paragraphs and short selections, when read for a specific purpose and tested for comprehension, yield results which improve reading skills in most cases. Small group and individual work is usually followed, although some studies report good results with large groups. Most studies report the use of full class periods two to five days weekly. The need of trained teachers or trained supervision is often emphasized. Some studies

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The training of remedial and corrective reading at the secondary-school level is still a largely unexplored field. There is sufficiently satisfactory evidence, however, that remedial and corrective reading consisting of paragraphs and short selections, when read for a specific purpose and searched for comprehension, yield results which improve reading skills in such cases. Small group and individual work is usually followed, although some studies report good results with large groups. Most studies report the use of full class periods two to five days weekly. The need of trained teachers or trained supervision is often emphasized. Some studies

express doubt regarding the ultimate value of remedial and corrective-reading instruction, as commonly conducted at the secondary-school level.

There appears to be a trend toward giving more attention to directing the maturing reading skills of all students. This may be the ultimate solution of the corrective-reading problem. The demands on reading skills are so extensive today that the procedures of the past must be modified.

The results.-- On June 1 and June 8, respectively, the Traxler Silent Reading Test, Form 2, and the Haggerty Reading Examination, Sigma 3: Form B were administered to the 82 ninth-grade pupils who had received the alternate forms of the tests in the fall and who still remained in school. The results on the second form of the Traxler test were used in comparison with the results on the first form to measure phases of reading growth. Form B of the Haggerty test did not prove to be equivalent to Form A, and consequently it was necessary to discard the scores made on Form B, as far as further consideration of them in this study was concerned.

Reading gains made by the entire class, and by the 50 pupils who were the best readers at the beginning of the study and who did not receive corrective instruction, exceeded the gains made by the members of the corrective-reading groups. Theoretically one month's gain in reading-grade scores should be achieved for each month of school attendance, without specific reading instruction at the ninth-grade level. Actually progress in reading

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There appears to be a trend toward giving more attention to improving the underlying reading skills of all students. This may be the ultimate solution of the corrective-reading problem. The demands on reading skills are so extensive today that the procedures of the past must be modified.

The results.-- In Lists 1 and Lists 6, respectively, the Traxler Silent Reading Test, Form 2, and the Metropolitan Achievement Battery, Form 2, were administered to the 82 ninth-grade pupils who had received the alternate forms of the tests in the fall and who still remained in school. The results on these good forms of the Traxler test were used in comparison with the results on the first form to measure phases of reading growth. Form 2 of the Metropolitan test did not prove to be equivalent to Form 4, and consequently it was necessary to discard the scores made on Form 2, as far as further consideration of them in this study was concerned.

Reading gains made by the entire class, and by the 20 pupils who were the best readers at the beginning of the study and who did not receive corrective instruction, exceeded the gains made by the members of the corrective-reading group. Theoretically one month's gain in reading-grade score should be achieved for each month of school attendance, without special in reading instruction at the ninth-grade level. Actually progress in reading

at this level is so closely related to mental age, the individual pupil's interests and other factors, that many pupils do not make improvement equal to the theoretical expectancy. This group of 82 pupils, including the 32 who received corrective-reading instruction, gained, on the average, during the approximately seven school months' interval between the two tests, two months in story comprehension, seven months in word comprehension, six months in paragraph comprehension and six months in total comprehension. They increased their rate of reading an average of 21 words per minute. Their total grade score (which includes rate) increased 10 school months. During the same period the 32 pupils who received corrective-reading instruction gained on the average seven months in word comprehension, four months in paragraph comprehension, and four months in total comprehension. They made no gains in story comprehension. Their reading rate increased an average of 19 words per minute, to an average rate of 207 words. Their total grade score increased eight school months.

Twenty-three of the 32 pupils in the corrective-reading groups increased their rate of reading by amounts ranging from six to 120 words per minute. Fifteen improved their comprehension of the main points of the 1000-word selection, on which the reading rates were measured, while 14 lowered their scores. Of the 15 who increased their comprehension on this type of reading, 12 also increased their rate of reading. Of the 14 whose comprehension scores were lower on the second test, 11 had increased their rate of reading. There is some evidence of improvement in rate without lowering the average

at this level is so closely related to mental age, the individual pupil's interests and other factors, that many pupils do not make improvement equal to the theoretical expectancy. This group of 22 pupils, including the 22 who received corrective-reading instruction, gained, on the average, during the approximately seven school months' interval between the two tests, two months in word comprehension, seven months in word comprehension, six months in paragraph comprehension and six months in total comprehension. They increased their rate of reading an average of 21 words per minute. Their total grade score (which includes rate) increased 10 school months. During the same period the 22 pupils who received corrective-reading instruction gained on the average seven months in word comprehension, four months in paragraph comprehension, and four months in total comprehension. They made no gains in study comprehension. Their reading rate increased an average of 18 words per minute, to an average rate of 207 words. Their total grade score improved eight school months.

Twenty-three of the 22 pupils in the corrective-reading group increased their rate of reading by amounts ranging from six to 120 words per minute. Fifteen improved their comprehension of the main points of the 1000-word selection, on which the reading rates were measured, while 14 lowered their score. Of the 15 who increased their comprehension on this type of reading, 12 also increased their rate of reading. Of the 14 whose comprehension scores were lower on the second test, 11 had increased their rate of reading. There is some evidence of improvement in rate without lowering the average

comprehension of what was read.

Power of comprehension was best measured by the paragraph comprehension sub-test of the Traxler test. Twenty-two of the 32 corrective-reading group pupils showed gains on this sub-test, four showed no change, and six showed losses. Fourteen showed gains appreciably in excess of the normal expectancy. Since these 32 pupils were the slowest readers among the 82 ninth-grade children, there is some evidence that the corrective instruction in comprehension was effective with a considerable proportion of them.

On the vocabulary sub-test, 20 members of the corrective-reading groups made gains, the scores of three were unchanged, and nine showed losses. On this sub-test the gains of the corrective groups equalled the average gains of the class as a whole. This part of the corrective-reading program was apparently more effective than any of the other phases, resulting in an average gain of seven months with the slowest readers during a period of instruction in corrective reading covering six school months.

The reading-achievement quotients of the 32 corrective-reading pupils were computed for the beginning and the close of the corrective-reading period. The reading scores of the Traxler Silent Reading Tests, and the mental ages from the Stanford Revision of the Binet-Simon Test of Intelligence were used in computing the achievement quotients. The median achievement quotient at the beginning of the study was 115 and at the close of the study it was 112.5. These high achievement quotients were considered evidence that most of these children were reading

comprehension of what was read.

Power of comprehension was best measured by the paragraph comprehension sub-test of the Traxler test. Twenty-two of the 32 corrective-reading group pupils showed gains on this sub-test, four showed no change, and six showed losses. Fourteen showed gains approximately in excess of the normal expectancy. Since these 32 pupils were the slowest readers among the 8th grade children, there is some evidence that the corrective instruction in comprehension was effective with a considerable proportion of them.

On the vocabulary sub-test, 20 members of the corrective-reading group made gains, the scores of three were unchanged, and nine showed losses. On this sub-test the gains of the corrective group equalled the average gains of the class as a whole. This part of the corrective-reading program was apparently more effective than any of the other phases, resulting in an average gain of seven months with the slowest readers during a period of instruction in corrective reading covering six school months.

The reading-achievement quotients of the 32 corrective-reading pupils were computed for the beginning and the close of the corrective-reading period. The reading scores of the Traxler Silent Reading Test and the mental ages from the Stanford Revision of the Binet-Simon Test of Intelligence were used in computing the achievement quotients. The median achievement quotient at the beginning of the study was 116 and at the close of the study it was 124.6. These high achievement quotients were considered evidence that most of these children were reading

very well in comparison with what they should be considered capable of doing.

Members of the corrective-reading groups read a total of 315 books of their own choice between December 1, 1937 and June 1, 1938. This is an average of 9.8 books each. No direct relationship between growth in reading skills and number of books read could be ascertained. The quality of the books read was fairly high, with the better books coming from the public library and the more trashy ones from the homes.

Conclusions

Gains not impressive.-- The amount of growth in reading skills obtained in this study and described in the foregoing pages is not especially impressive. The results of the corrective-reading instruction are frankly less imposing than the writer had hoped for. Nevertheless, when it is considered that only about 45 minutes of class time per week, for a period of 20 weeks, was spent on the experiment, when it is taken into account that the work was conducted with pupils who were in the lowest two-fifths of the class in reading ability, and when it is recalled that in general pupils with intelligence quotients below 100 make only about half the gains that bright children do,[1] it is obvious that it would be expecting too much to look for large gains in reading ability.

Three aims of the corrective-reading instruction were set up:

1/ Hovious, op. cit., p. vii.

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Members of the corrective-reading group read a total of 515 books of their own choice between December 2, 1937 and June 1, 1938. This is an average of 4.7 books each. No direct relationship between growth in reading ability and number of books read could be ascertained. The quality of the books read was fairly high, with the better books coming from the public library and the more friendly ones from his home.

Conclusions

Gains not impressive.— The amount of growth in reading ability obtained in this study and described in the foregoing pages is not especially impressive. The results of the corrective-reading instructions are fairly less impressive than the writer had hoped for. Nevertheless, when it is remembered that only about 45 minutes of class time per week, for a period of 20 weeks, was spent on the experiment, when it is taken into account that the work was continued with pupils who were in the lowest half-fifths of the class in reading ability, and when it is remembered that in general results with instructions quotients below 100 are very poor, the value that might obtained does, in fact, appear to be considerable. It is obvious that it would be exceedingly too much to hope for large gains in reading ability.

Three uses of the corrective-reading laboratory are worth not:

1. Lawson, op. cit., p. 41.

(1) to increase reading rate and to train in the discriminating use of reading rate, (2) to improve reading vocabulary, and (3) to improve comprehension. There has been a definite increase in the average reading rate of these 32 slow readers; this increase is practically equal to the increase made by the average of the entire class, and was made without reducing the average comprehension score of the group. There has been marked improvement in vocabulary comprehension, with a gain in terms of months on the grade scores exceeding the number of months during which the corrective-reading instruction was offered. Improvement in power of comprehension was shown by about 75 per cent of the corrective-reading groups, and nearly 50 per cent of these pupils made gains in months on their comprehension grade scores exceeding the number of months' duration of the instruction. The average gain in total grade score was eight school months, exceeding by two the number of months of instruction.

Statements justified by results.-- These results justify the following statements:

1. Positive gains in reading rate, vocabulary and comprehension resulted from the corrective-reading instruction.

2. The gains were small and somewhat unimpressive.

3. The period of corrective-reading instruction was too short, or the amount of time devoted to it per week was too small, for large results.

4. Some help for corrective (as distinguished from remedial) reading cases can be successfully performed in the regular English

(1) to improve reading rate so as to train in the discriminating use of reading rate, (2) to improve reading vocabulary, and (3) to improve comprehension. There has been a definite increase in the average reading rate of those 22 slow readers; this increase is practically equal to the increase made by the average of the other slows, and was made without training, the average comprehension score of the group has been marked improvement in vocabulary comprehension, with a gain in terms of months on the grade scores corresponding the number of months during which the corrective-reading instruction was offered. Improvement in power of comprehension was shown by about 75 per cent of the corrective-reading group, and nearly 50 per cent of these pupils made gains in months on their comprehension grade scores exceeding the number of months' duration of the instruction. The average gain in total grade score was eight school months, according by two the number of months of instruction.

Interpretations justified by results.-- These results justify the following statements:

1. Positive gains in reading rate, vocabulary and comprehension resulted from the corrective-reading instruction.

2. The gains were small and somewhat unsuccessive.

3. The period of corrective-reading instruction was too short, or the amount of time devoted to it per week was too small, for large results.

4. Some high correspondence (or distinguished from random) reading errors can be successfully performed in the regular English

classes, if other means of corrective instruction are not available.

Inferences drawn from the study.-- Certain inferences, which can be drawn from this study but which have by no means been proved by it, are:

1. If corrective-reading instruction is to be given in regular English classes, it should be a long time program. It should, probably, begin with grade seven, (where formal reading instruction is usually first omitted) and extend at least through grade nine.

2. That lack of special training in remedial- and corrective-reading procedures on the part of the teacher of English, while of course a distinct disadvantage, need not deter her from attempting a corrective-reading program, provided she is willing to so some reading in the corrective-reading field.

3. That eventually, due to the increasingly extensive and exacting demands on reading skills, a program for guiding the maturing reading abilities of all junior high school pupils will be in demand.

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2. That lack of special training in remedial- and corrective-reading procedures on the part of the teacher of English, while of course a distinct disadvantage, need not deter her from attempting a corrective-reading program, provided she is willing to go some reading in the corrective-reading field.

3. That eventually, due to the increasingly extensive and exacting demands on reading ability, a program for guiding the motoring reading activities of all junior high school pupils will be in demand.

APPENDIX A

1. Grade Norms for Each Part and for Total Score for Traxler Silent Reading Test for Grades 7-10. (For use with either Form 1 or Form 2.) (Values for grade scores below 7-0 and above 10-9 obtained by interpolation.)

Grade	Rate	Story Comprehension	Word Meaning	Power of Comprehension	Total Comprehension	Total Score
(1)	(2)	(3)	(4)	(5)	(6)	(7)
4-2	-	-	-	-	-	42
4-7	-	8.0	-	-	-	-
4-8	-	-	-	-	-	48
4-9	-	-	-	-	-	49
5-0	-	-	-	-	-	50
5-1	-	-	-	-	-	51
5-2	-	-	-	-	-	52
5-3	-	-	-	-	-	53
5-4	-	-	-	-	-	54
5-5	-	-	-	-	-	55
5-6	-	-	-	-	-	56
5-7	-	-	-	-	-	57
5-8	33.5	-	-	10.0	-	58
5-9	33.6	-	-	10.3	27.3	59
6-0	33.6	-	-	10.6	28.1	60
6-1	33.7	-	9.0	10.9	28.9	61
6-2	33.8	-	9.3	11.1	29.7	62
6-3	33.9	-	9.7	11.4	30.5	63
6-4	34.0	-	10.1	11.7	31.3	64
6-5	34.1	-	10.5	11.9	32.1	65
6-6	34.2	-	10.9	12.2	32.9	66
6-7	34.2	10.0	11.3	12.5	33.7	67
6-8	34.3	10.1	11.7	12.8	34.5	68
6-9	34.4	10.2	12.1	13.0	35.3	69
7-0	34.5	10.3	12.5	13.3	36.1	70
7-1	34.6	10.4	12.9	13.6	36.9	71
7-2	34.7	10.5	13.3	13.9	37.7	72
7-3	34.8	10.6	13.8	14.1	38.5	73
7-4	34.8	10.7	14.2	14.4	39.3	74

APPENDIX A

1. Grade norms for each Part and for Total Score for Trexler Silent Reading Test for Grades 4-10. (For use with either form 1 or form 2.) (Values for grade scores below 4-0 and above 10-9 obtained by interpolation.)

Grade (1)	Part (2)	Phonic Comprehension (3)	Word Meaning (4)	Power of Comprehension (5)	Total Comprehension (6)	Total Score (7)
4-0	-	--	-	--	--	42
4-1	-	-	-	-	-	-
4-2	-	-	-	-	-	43
4-3	-	-	-	-	-	44
4-4						
4-5	-	-	-	-	-	50
4-6	-	-	-	-	-	51
4-7	-	-	-	-	-	52
4-8	-	-	-	-	-	53
4-9	-	-	-	-	-	54
5-0						
5-1	-	-	-	-	-	55
5-2	-	-	-	-	-	56
5-3	-	-	-	-	-	57
5-4	23.8	-	-	10.0	-	58
5-5	23.8	-	-	10.3	27.3	59
5-6						
5-7	23.8	-	-	10.6	28.1	60
5-8	23.7	-	9.0	10.9	28.9	61
5-9	23.6	-	9.5	11.1	29.7	62
6-0	23.8	-	9.7	11.4	30.5	63
6-1	24.0	-	10.1	11.7	31.2	64
6-2						
6-3	24.1	-	10.5	11.9	32.1	65
6-4	24.2	-	10.9	12.2	32.9	66
6-5	24.2	10.0	11.3	12.5	33.7	67
6-6	24.8	10.1	11.7	12.8	34.5	68
6-7	25.2	10.2	12.1	13.0	35.2	69
6-8						
6-9	25.8	10.4	12.5	13.3	36.1	70
7-0	26.0	10.6	12.9	13.6	36.9	71
7-1	26.7	10.8	13.2	13.9	37.7	72
7-2	26.9	10.9	13.6	14.1	38.5	73
7-3	27.0	10.9	13.9	14.4	39.3	74
7-4	27.0	10.9	14.2	14.6	40.0	75

1. Grade Norms. (continued)

Grade	Rate	Story Comprehension	Word Meaning	Power of Comprehension	Total Comprehension	Total Score
(1)	(2)	(3)	(4)	(5)	(6)	(7)
7-5	34.9	10.8	14.7	14.7	40.2	75
7-6	35.0	10.9	15.1	15.0	41.0	76
7-7	35.1	10.9	15.5	15.2	41.6	77
7-8	35.2	11.0	16.0	15.5	42.5	78
7-9	35.2	11.1	16.4	15.8	43.3	79
8-0	35.3	11.2	16.9	16.0	44.1	79
8-1	35.4	11.4	17.4	16.8	45.6	81
8-2	35.5	11.7	17.8	17.6	47.1	82
8-3	35.6	11.9	18.3	18.4	48.6	84
8-4	35.7	12.1	18.7	19.2	50.0	85
8-5	35.8	12.4	19.2	20.0	51.6	87
8-6	35.8	12.6	19.7	20.8	53.1	89
8-7	35.9	12.8	20.1	21.6	54.5	90
8-8	36.0	13.0	20.6	22.4	56.0	92
8-9	36.1	13.3	21.0	23.2	57.5	93
9-0	36.2	13.5	21.5	24.0	59.0	95
9-1	36.2	13.7	22.1	24.4	60.2	96
9-2	36.3	13.8	22.7	24.8	61.3	97
9-3	36.3	14.0	23.3	25.2	62.5	98
9-4	36.4	14.1	23.8	25.5	63.4	99
9-5	36.4	14.3	24.5	26.0	64.8	100
9-6	36.4	14.4	25.1	26.3	65.8	101
9-7	36.5	14.6	25.7	26.7	67.0	102
9-8	36.5	14.7	26.3	27.1	68.1	103
9-9	36.6	14.9	26.9	27.5	69.3	104
10-0	36.6	15.0	27.5	27.9	69.9	105
10-1	36.6	15.1	27.9	28.2	71.2	106
10-2	36.7	15.3	28.3	28.4	72.0	107
10-3	36.7	15.4	28.6	28.7	72.7	108
10-4	36.8	15.5	29.0	29.0	73.5	109
10-5	36.8	15.7	29.4	29.3	74.4	110
10-6	36.8	15.8	29.8	29.5	75.1	111
10-7	36.9	15.9	30.2	29.8	75.9	112
10-8	36.9	16.0	30.5	30.1	76.6	113
10-9	37.0	16.2	30.9	30.3	77.4	114

1. Grade Norms. (continued)

Grade (1)	Age (2)	Story Comprehension (3)	Word Meaning (4)	Power of Conversation (5)	Total Comprehension (6)	Total Score (7)
7-5	34.8	10.5	14.7	12.7	40.2	78
7-6	35.0	10.8	15.1	13.0	41.0	76
7-7	35.1	10.9	15.3	13.2	41.8	77
7-8	35.2	11.0	15.5	13.5	42.5	78
7-9	35.3	11.1	15.4	13.2	42.7	79
8-0	35.5	11.2	15.9	12.0	44.1	79
8-1	35.4	11.4	17.4	13.2	46.5	81
8-2	35.5	11.7	17.8	17.8	47.1	82
8-3	35.8	11.9	15.3	13.4	46.1	84
8-4	35.7	12.1	15.7	13.2	50.0	85
8-5	35.3	12.4	15.2	20.0	51.6	87
8-6	35.5	12.8	15.7	20.3	55.1	89
8-7	35.3	12.3	20.1	21.8	54.5	90
8-8	35.0	13.0	20.5	22.4	56.0	92
8-9	36.1	13.3	21.0	22.2	57.5	93
9-0	35.2	13.5	21.5	24.0	58.0	95
9-1	35.2	13.7	23.1	24.4	60.2	98
9-2	36.3	13.8	22.7	24.7	61.8	97
9-3	35.3	14.0	23.3	25.2	62.5	98
9-4	35.4	14.1	23.7	25.5	63.4	99
9-5	35.4	14.3	24.5	26.0	64.8	100
9-6	36.4	14.4	25.1	27.5	66.3	101
9-7	36.5	14.6	25.7	28.7	67.0	102
9-8	35.3	14.7	26.3	27.1	68.1	103
9-9	36.8	14.9	26.9	27.5	69.3	104
10-0	36.4	15.0	27.5	27.9	69.9	105
10-1	36.6	15.1	27.9	29.3	72.2	106
10-2	37.7	15.3	28.3	28.4	72.0	107
10-3	38.7	15.4	28.8	28.7	72.7	108
10-4	38.3	15.5	29.0	29.0	73.9	109
10-5	39.7	15.7	29.4	31.3	74.4	110
10-6	38.8	15.8	29.8	33.5	75.1	111
10-7	39.9	15.9	30.3	31.3	75.0	112
10-8	39.2	16.0	30.5	30.1	75.8	113
10-9	37.0	16.2	30.9	33.3	77.4	114

1. Grade Norms (concluded)

Grade	Rate	Story Comprehension	Word Meaning	Power of Comprehension	Total Comprehension	Total Score
(1)	(2)	(3)	(4)	(5)	(6)	(7)
11-0	-	16.3	31.3	30.6	78.1	-
11-1	-	16.4	31.7	30.9	78.9	-
11-2	-	16.5	32.0	31.1	-	-
11-3	-	16.6	32.4	31.4	-	-
11-4	-	16.7	32.8	31.7	-	-
11-5	-	16.8	33.1	31.9	-	-
11-6	-	16.9	33.5	-	-	-
11-7	-	17.0	33.9	-	-	-
12-7	-	18.0	-	-	-	-

1. Proto Norse (concluded)

2. Form Used in Survey of Reading Interests.

Name of Pupil _____ Date of Interview _____

1. Do you like to read? _____

2. What do you read when you read just for fun?

__Biography __Animal __Stories __Mystery __Plays
__Adventure __News __Aviation __Poetry __Myth-Legends

3. Name several books you have read this school year _____
_____

4. What newspapers do you like to read? _____
_____

5. What magazines do you like to read? _____
_____

6. Where do you obtain the books and magazines which you read?

___Home ___School ___Public Library _____

7. Do you have a library of your own at home? _____

About how many books? _____

8. What magazines and newspapers are taken regularly in your home?

_____ _____ _____
_____ _____ _____
_____ _____ _____

9. Do other members of the family ever read to you at home? _____

How often? _____ What do they read? _____

10. What school subjects do you study at home? _____
_____

11. Comments of pupils not included above _____
_____
_____
_____

2. Form used in survey of reading interests.

Name of Pupil _____ Date of Interview _____

1. Do you like to read? _____

2. What do you read when you read just for fun?

___ Do really ___ Animal ___ Science ___ Sport ___ Plays
___ Adventure ___ Home ___ Aviation ___ Poetry ___ Girls-Boys

3. Name several books you have read this school year _____

4. What newspapers do you like to read? _____

5. What magazines do you like to read? _____

6. Where do you obtain the books and magazines which you read?

___ Home ___ School ___ Public Library _____

7. Do you have a library of your own at home? _____

About how many books? _____

8. What magazines and newspapers are taken regularly in your home?

_____

_____

_____

9. Do other members of the family ever read to you at home? _____

How often? _____ What do they read? _____

10. What school subjects do you study at home? _____

_____

11. Comments of pupils not included above _____

_____

_____

_____

APPENDIX B

Tests Used in the Study

Appendix B includes samples of all tests used in this study, with the exception of the Record Booklets for the Standford Revision of the Binet-Simon Test of Intelligence. The pages of these various tests have been re-numbered, to make their page numbers run consecutively following the pages in the body of this report.

APPENDIX B

Tests Used in the Study

Appendix B includes sample of all tests used in this study, with the exception of the Record Booklets for the Stanford Revision of the Binet-Simon Test of Intelligence. The pages of these various tests have been re-numbered, to make their page numbers run consecutively following the pages in the body of this report.

WORD DISCRIMINATION TEST

NAME _____ DATE _____

ENGLISH DIVISION ____

SUMMARY OF SCORES

Number of Errors in Vowels: _____

Number of Errors in Consonants: _____

Number of Errors in Reversals: _____

Number of Errors in Additions and Omissions: _____

A. DISCRIMINATION OF VOWELS

1.	stick	7.	shop	13.	use	19.	miss	25.	spill
	stuck		shape		ice		muss		spell
	stack		ship		ace		moss		spool
	stock		shut		ease		mass		spoil
	stake		shoot		eyes		mess		speel
2.	bitter	8.	paste	14.	fan	20.	latter	26.	toil
	better		past		fine		letter		tool
	butter		pest		fin		litter		toll
	batter		post		fen		later		tall
	bottle		piece		fun		blotter		tell
3.	track	9.	top	15.	white	21.	flow	27.	ail
	truck		tap		wheat		flaw		oil
	trick		tape		what		flew		owl
	treck		tip		whet		blew		eel
	trunk		type		whit		blow		awl
4.	mud	10.	cot	16.	rain	22.	brewed	28.	star
	made		cute		ran		broad		stare
	mode		cut		roan		bread		stir
	mid		cat		run		breed		store
	mede		cite		ream		braid		steer
5.	bottom	11.	pole	17.	fold	23.	mace	29.	form
	batten		pile		failed		muse		firm
	button		pale		felled		mice		farm
	bitten		pill		filled		mouse		fame
	beaten		peel		filed		niece		fume
6.	pine	12.	slate	18.	quit	24.	know	30.	fire
	pun		slat		quite		knew		for
	pin		sleet		quell		knit		far
	pane		slot		quail		knot		fare
	pen		slit		quote		knee		fear

Total Number Errors _____

B. DISCRIMINATION OF CONSONANTS

1.	frame	2.	clutch	3.	charm	4.	chord	5.	loom
	flame		crutch		chasm		choke		loan
	flair		cram		chart		chore		loam
	flume		clam		chase		chose		load
	from		clan		sharp		chrome		loon

6.	moat	11.	sort	16.	pleasant	21.	whether	26.	sag
	note		short		peasant		weather		sang
	meet		sown		pheasant		wither		slang
	mole		shorn		present		whither		slag
	neat		shown		peanut		thither		stag
7.	serge	12.	bus	17.	ratter	22.	tart	27.	flung
	berg		busy		batter		heart		slung
	purge		bushy		fatter		hard		stung
	dirge		bush		father		hardy		slunk
	bridge		bust		rather		hearty		flunk
8.	dirk	13.	witch	18.	trot	23.	rich	28.	think
	birch		swish		throat		ridge		thing
	perch		switch		through		ledge		brink
	pitch		wish		troth		wedge		bring
	ditch		twitch		though		witch		blink
9.	pride	14.	cheer	19.	then	24.	life	29.	lunch
	bribe		sheer		when		live		luck
	bride		sheep		there		hive		lurch
	dried		cheap		where		fife		punch
	bide		sheet		were		five		pluck
10.	troop	15.	praise	20.	whirl	25.	face	30.	curtain
	droop		froze		twirl		fact		certain
	true		phrase		twist		trace		certainly
	drew		prose		whist		tract		certainty
	dew		plays		curl		tact		carton

Total Number Errors_____

C. REVERSALS

1.	raw	5.	quite	9.	sang	13.	pine	17.	angle
	war		quiet		snag		dine		angel
2.	form	6.	split	10.	dairy	14.	lien	18.	collar
	from		spilt		diary		loin		corral
3.	card	7.	rudder	11.	cold	15.	calm	19.	felt
	crab		rubber		clod		clam		left
4.	sign	8.	scared	12.	colcr	16.	throat	20.	spurt
	sing		sacred		coral		troth		squirt

Total Number Errors_____

6.	room	11.	sort	16.	pleasant	21.	whatever	26.	sag
	note		smart		peasant		weather		song
	meat		soon		pheasant		wither		along
	role		shorn		present		whither		slag
	heat		sown		peasant		tether		stag
7.	serve	12.	hue	17.	rather	22.	hart	27.	flag
	verg		hung		better		heart		slung
	purge		hasty		tether		hard		stung
	dirge		hush		letter		hardy		slunk
	bridge		hunt		rather		heavy		flunk
8.	dink	13.	which	18.	trek	23.	crisp	28.	blink
	bink		swish		tinent		ridge		bring
	porch		switch		turnpike		judge		bulk
	pitch		wish		trick		rudge		bring
	ditch		twitch		shoulder		ritch		blink
9.	price	14.	chser	19.	timan	24.	life	29.	lurch
	bride		ether		when		line		lunk
	bride		sheep		thorn		wive		lurch
	tried		cheap		heare		life		punch
	bide		shark		were		five		pluck
10.	troop	15.	praise	20.	whirl	25.	face	30.	cupboard
	droop		frose		twirl		fact		certain
	true		pirate		twirl		brose		certainly
	drum		rose		whirl		frost		certainly
	dew		plate		curl		test		carbon

Total number errors _____

G. DIVERSALS

1.	rem	6.	quite	11.	sang	16.	plan	17.	angle
	war		grist		sang		also		angel
2.	form	6.	spirit	10.	dairy	14.	lion	18.	collar
	from		spirit		dirty		lion		corral
3.	cord	7.	rudder	12.	cold	15.	calm	19.	felt
	cord		rubber		slod		clam		left
4.	also	8.	scared	13.	color	16.	bonnet	20.	mount
	sing		sacred		coral		front		equipt

Total number errors _____

D. SOUNDS ADDED OR OMITTED

1.	save slave	5.	hope hoped	9.	histry history	13.	discovery discover	17.	inquire inquiry
2.	father farther	6.	libary library	10.	February Febuary	14.	suitable suitably	18.	transmit transit
3.	play playing	7.	athelete athlete	11.	angery angry	15.	peach preach	19.	inspect insect
4.	through though	8.	laboratory labratory	12.	goverment government	16.	electric electrical	20.	pronoun pronounce

Total Number Errors_____

Total Number Errors _____

WORD PRONUNCIATION TEST

palace	possession	azure
beautiful	dignifying	antiquities
interesting	approximately	architecture
reared	proportioned	archaeological
maple	florid	fanaticism
blackberrying	profusion	formulated
appear	scrupulously	inconsistent
industrious	appearance	applicable
wonderful	habitually	mathematicians
magnificent	arduously	statisticians
brilliancy	contemptuous	universally
twilight	continuously	hypotheses
embraced	exigencies	phenomena
contrast	exhausted	attentively
character	ingratiatingly	general
noblest	persistently	position
exalting	alluvial	complexion

Words underlined -- mispronounced

Words starred -- worked out pronunciation, except accent, by sounding

NO. 6 PRONUNCIATION TEST

palace	possession	sure
beautiful	dignifying	antipathies
interesting	approximately	arrangements
reared	proportioned	archaeological
magic	floria	fanatical
blackberrying	profusion	formulated
appear	compulsorily	laboratories
industrious	appearance	applicable
wonderful	naturally	mathematicians
magnificent	arduously	statisticians
brilliancy	contemporaneous	universally
twilight	continuously	hypothesis
embroad	exigencies	phenomena
contract	exhaustion	attractively
observer	imperatively	general
noblest	peratively	position
exalting	ultuvial	complexion

Words underlined -- misprononounced

Words starred -- worked out pronunciation, except accent, by sounding

Haggerty Reading Examination

SIGMA 3

FOR GRADES 6–12

Arranged and standardized by M. E. Haggerty and Laura C. Haggerty, University of Minnesota

MANUAL OF DIRECTIONS (*Revised*)

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I. WHEN ARE ACHIEVEMENT TESTS SATISFACTORY?

Tests should meet certain statistical criteria if the results secured from them are to be usable for diagnostic and administrative purposes. The most important of these are discussed here for the guidance of school officers in selecting the tests which they will use. Data are presented showing the extent to which the Haggerty Reading Examination meets these requirements.

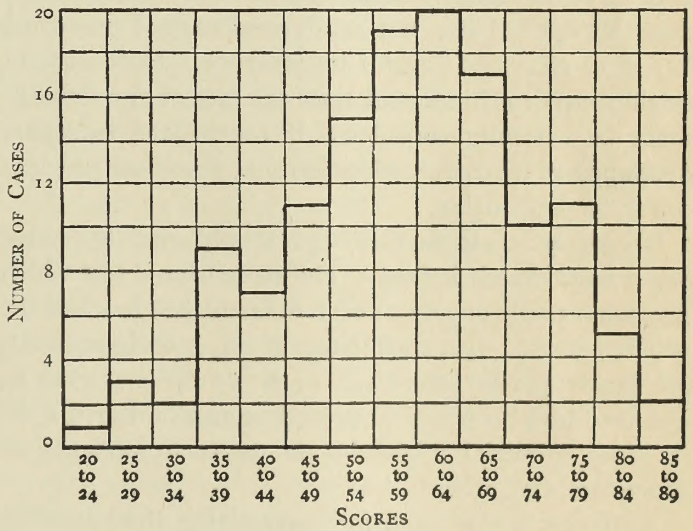
1. Discriminative Capacity

Every test should serve to distinguish one individual from another and to discriminate the individuals of a group so that each is properly placed in his relative position as regards the trait which is measured. If one individual has a certain amount of ability to read, and another has enough more of the same trait to make a real difference between the two individuals, then the test must show this difference properly. This means that the units in which the test measures must be sufficiently small to measure all significant differences and that the range of the test from low score to high score must be great enough to measure extreme cases, whether these extreme cases have much or little of the trait in question.

More specifically, discriminative capacity means two things: First, that the size of the measuring units is adequate for the measurement of significant differences; and second, that a group of persons selected at random will distribute themselves along a scale, with few or no individuals making zero scores, a very large number of individuals making average scores, and a small number or no individuals making perfect scores.

The figure below, which gives the surface of frequency for a group of persons measured by the Haggerty Reading Examination: Sigma 3, shows that it has adequate discriminative capacity.

Frequency Distribution for Haggerty Reading Examination: Sigma 3 — 132 Cases



An examination that is to be useful in school measurement should show two additional criteria. First, each school grade or half-grade should show a median score higher than the median score of the grade or half-grade next below, and the intergrade steps should be definitely determinable. In how far the test meets this requirement may be seen from the tables of standard grade scores, page 6. Second, the median deviation from the central tendency shown in the test should not be large in the case of any well-graded class. As a satisfactory measure for the classification of school children the median deviation should not exceed the increase of

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scores shown from one grade median to that of the next grade above.

A test, then, has satisfactory discriminative capacity when it measures individuals in sufficiently definite units properly to represent their actual traits, when it shows large groupings near a midpoint on a series of measures, when it shows few zero and few perfect scores, when it shows definite and clearly distinguishable intergrade steps, and when the median deviation for any well-grouped class is small. The test described here meets these requirements in a highly satisfactory degree.

2. Reliability

About any test which can be given, whether it be an achievement test or an intelligence examination, there is a certain unreliability. By this is meant that if the test were given again to the same pupils, certain of them would score higher and others would score lower. This unreliability inheres also in teachers' judgments and, in a theoretical sense, in every measurement that can be made, whether that measurement be of human capacities or of physical facts. Science has found no way to eliminate this unreliability, but has devised ways of measuring it and of compensating for its presence. In the use of intelligence or achievement tests the fact of unreliability must be carefully considered if conclusions regarding overlapping, inaccurate classification, or school progress are to be dependable.

Obviously a satisfactory test should give the same result each time it is used. The score from a test which gives one result one day and a different result when the test is repeated or a similar one given, is undependable. No important inference can be made from a score so obtained and no practical procedure can be based upon it, since a retrial might invalidate such inference or procedure altogether.

An important method for determining the reliability of the test is to repeat the test and to calculate the correlation between the results of the first trial and those of the second. If this correlation is high, it may be inferred that the test is reliable and that the score which an individual makes the first time is a fair index of what he will do on repeated trials.

The Haggerty Reading Examination: Sigma 3, has been subjected to this method of determining reliability. It was given to 126 pupils in Grades 5C to 8A on one day, and the test was repeated two days later. The correlation between the two trials was .885. The several tests showed correlations as follows: Vocabulary, .865; Sentence, .769; and Paragraph, .806. The average increase in score was about 5 points. Use of the test with other groups indicates that these figures represent the valid expectation from this examination; namely, that the first measure is highly dependable.

3. Significance

It is possible that an examination may have satisfactory "discriminative capacity" and satisfactory "reliability," and yet be unsatisfactory as a standard examination, because the results of the test have no significance. It should be possible by measuring the reading achievement of sixth-grade pupils to determine whether or not such pupils can do the reading work required in the seventh-grade school program. The statistical method for determining the significance of a test is that of determining the coefficient of correlation between the test and other admittedly significant measures of capacity or achievement. If such coefficients are high, the test is in so far significant, but low coefficients of correlation show low significance or none.

The significance of the Haggerty Reading Examination: Sigma 3, is great. Not only does the test as a whole show high correlations with other significant measures of school progress, but the correlation for each of the three tests is high. For 145 pupils in Grades 7C to 8C the correlation of the test scores with a criterion composed of grade location, age, and teachers' estimates of scholarship was .61. With the total score of seven examinations (Army Alpha, Otis, Pressey, Thurstone, Miller, Delta 2, and Sigma 3) for 60 university students the correlation was .64. Correlations have been figured for each exercise with various other measures of school achievement, and all results confirm the general conclusion that the Sigma 3 examination is a really significant measure.

II. WHO CAN GIVE ACHIEVEMENT TESTS?

Teachers should learn through actual experience in giving and scoring tests how great the differences in achievement among children of the same age really are. Only when they deal with concrete cases measured in definite terms will they be able to direct their school work so as to secure the best results. It is fortunate that in the development of methods of achievement testing we have arrived at the place where a good teacher can safely give the tests. The development of group methods enables her to do this for all the children who come under her direction.

The average teacher, however, cannot make an adequate psychological diagnosis of complicated and difficult cases. Such children should have the services of an expert psychologist. The point to be urged here is that an intelligent teacher can be quickly taught how to give and score achievement tests In almost any school system there is some teacher, principal, or supervisor who has had sufficient training in normal school or college to enable him to follow the directions here given. Such a person can be used to train others, and with proper per-

severance and precautions an entire corps can be taught to do the work.

1. Teaching and Testing

A handicap which even the good teacher suffers in giving tests is his well-established teaching habits. These lead him to assist the pupil who is trying to solve a difficult problem, by the asking of leading or suggestive questions or by a simplification of the situation. Such methods are out of place in the giving of a standard test. For the duration of the examination the teacher ceases to teach and merely acts to provide a situation to which each child will respond as his abilities enable him to respond. This situation must be the same for all children, and to this end the teacher must restrain his tendency to help weak pupils or to simplify the tests more than the printed directions already do. *The directions must be naturally but rigidly followed.*

2. Practice in Testing

Every examiner should have preliminary practice in giving the tests before attempting to examine a class. Well-trained teachers, supervisors, or superintendents, not trained in giving tests, will show peculiar variations in methods of work in their early efforts, and these variations may make significant differences in results. Practice should be continued until variations in method are reduced to a minimum. If a group of teachers will practice giving the tests to small groups of pupils under criticism of each other or of a principal, supervisor, or superintendent, they will soon attain a fair uniformity.

III. GENERAL DIRECTIONS

To assist those who have had little experience in giving tests, the following general directions are offered, in order that the results of the tests may be comparable with similar results obtained elsewhere. Specific directions for each part of the test are given below.

(1) *Quiet room.* The examination should be given in a room free from distracting noises within or without. Preferably only examiner and pupils should be present.

(2) *Clear desks.* Have all books, papers, and other materials removed from the tops of the desks.

(3) *Sharp pencils.* Have the pupils use pencil in all tests. Each pupil should have two sharpened pencils with which to begin, and the examiner should keep a supply of sharpened pencils for emergencies.

(4) *Distribution of materials.* The examiner should remain at the front of the room during the examination. He should not distribute materials himself. He should lay bundles of papers on the desks of pupils in the front seats, and these pupils should distribute them.

(5) *Examiner's manner.* The examiner's manner should be pleasant and such as to set the pupils at ease at the start. He should speak distinctly, in a moderate voice, and should avoid anything that would distract the attention of pupils from the work. He should proceed promptly, so as to keep pupils alert, but should avoid excitement. The examinations can be successfully given only when the children are attentive and interested. Go about your work in a businesslike way. Do not hurry, but do not waste time. Children naturally like these tests, and any failure on their part to respond in a proper manner will usually be due to tactlessness on the part of the examiner.

(6) *Giving directions.* The directions are meant to be so explicit that all children will understand exactly what to do when the signal to write is given. In order to maintain uniform conditions in giving the test, do not entertain any questions from pupils once the test is begun. Read and speak all directions slowly and distinctly, so that every child will understand clearly what he is to do, but do not repeat if the instructions do not so direct. Avoid all impromptu directions, since such variations in the method may modify the results.

(7) *Keeping time.* The results of the examinations will be valueless unless the time is kept accurately. A good watch having a second hand is sufficiently accurate if the examiner is skillful in starting and stopping the pupils on the exact second. This is exceedingly important.

In starting a test be sure that all pupils are at "Attention" before giving the starting signal. Start each test with the second hand of your watch at 60 or zero. Watch the time accurately and speak the word "Stop" in a pleasant but decisive tone, so that all pupils will stop work at the same time. If by chance you make any mistake in timing the test, note that fact, so that account may be taken of it when the tests are scored.

(8) *Copying.* It is absolutely necessary that copying be prevented. This kind of unfairness is especially likely to occur where two or more children occupy the same desk or where the aisles between desks are narrow. Where the conditions are not favorable for work, the examiner should not hesitate to reseat pupils, nor to call to attention quietly but firmly any pupil caught copying. The papers of such children should be marked so as not to be counted in the scoring of the class.

(9) *Unreliable papers.* In some classes papers of certain pupils will be rendered unreliable by the breaking of a pencil point, by children leaving the room, or by other variations. All such papers should be marked so that they will not be counted in a group score.

IV. DIRECTIONS FOR GIVING

(1) The examination consists of three tests: Vocabulary, Sentence Reading, and Paragraph Reading.

(2) Each of these tests is preceded by a fore-exercise. The fore-exercise is intended in each case to make clear the particular things which the pupils are to do in the test proper.

(3) When the tests have been distributed, the examiner will instruct the pupils to fill in the blanks at the top of the first page. This work will be expedited even in upper-grade classes by the following instructions:

a. **"On this page** (pointing to the front page of the booklet) **there are certain blanks to fill in. Look at the first one and write your first and last names.** (Pause.)

b. **"On the same line read, 'I am a .....' Write the word 'Boy,' if you are a boy. If you are a girl, write the word 'Girl.'** (Pause.)

c. **"On the next line it says: 'This is the ..... day of ..... 19..' Write in the day, the name of the month, and the year.** (Examiner will give the correct data.) (Pause.)

d. **"On the same line tell how old you are.** (Pause.)

e. **"Now look at the next line. 'My next birthday will be .....' Write the month, day, and year.** (Pause.)

f. **"Look at the next sentence: 'I am in ..... half of Grade .....' In the first blank write the word 'First' if you are in the first half grade; write the word 'Second' if you are in the second half grade.** (Pause.) **In the second blank write the figure showing which grade you are in.** (Pause.)

g. **"Now look at the next line and write the name of your school.** (Pause.) **On the same line write the name of your city (county).** (Pause.)

h. **"On the last line write the name of your state."** (Pause.)

(4) There are two methods of giving the directions for the Sigma 3 examination. The first method, which may be designated Method A and the one from which the norms of Tables 1 and 2 are derived, is as follows:

Method A

(5) When the blanks at the top of page 1 have been filled, the examiner in introducing the first fore-exercise will proceed as follows:

a. **"Just below where you have been writing there are directions for Test 1. When I say 'Go,' read these directions as carefully as you can and do what they say to do. Do not turn the page over until I tell you to do so. Ready! Go!"** The examiner now allows ample time for all pupils to complete this page. This time will vary with the grade being examined.

b. When the pupils have read to the bottom of page 1, the examiner will say, **"Attention! Now turn to page 2 and mark all the definitions correctly. Mark the definitions in order. Ready! Go!"** The examiner will allow 5 minutes from the time he says "Go."

c. He will then say, **"Stop! Now look at the directions for Test 2. Read these directions and do what they say to do."** Ample time should be allowed for pupils to read to the bottom of page 3.

d. The examiner will then say, **"Attention! Turn to page 4 and mark all the sentences correctly. Mark the sentences in order. Ready! Go!"** 3 minutes should be allowed for this exercise.

e. At the end of this time the examiner will say, **"Stop! Now look at the directions for Test 3. Read these directions in order and do what they say to do."**

f. Ample time should be allowed for reading the directions on page 5. Not over 5 minutes, even for fifth-grade classes, is necessary.

g. The examiner will now say, **"Attention! Turn the page. You will have about 20 minutes to work. Do all you can in that time, but work carefully. Make the correct mark for each direction. Ready! Go!"**

h. At the end of 20 minutes from the time he says "Go," he will say **"Stop!"** and immediately collect all the papers.

(6) Since the printed instructions are so explicit, it is unnecessary for the examiner to supplement them with oral directions. He should, therefore, carefully avoid giving any individual help even in the fore-exercises. By so doing the conditions for testing will more nearly approximate those under which the standards have been determined.

Method B

(7) The examiner is even more completely eliminated from the test and the pupil more completely thrown upon his own resources by the following method:

a. When the blanks at the top of page 1 have been filled, the examiner says:

"Look at the directions for Test 1. Read these directions and do what they say to do. When you reach the bottom of the page, turn over to the next page and continue in the same way. Ready! Go!"

b. Allow 6 minutes from the word "Go" and then say, **"Stop! Now look at the directions for Test 2. Read these directions and do what they say to do. When you reach the bottom of the page, turn over to the next page and mark all the sentences in order. Ready! Go!"**

c. Allow 4 minutes and then say, **"Stop! Look at the directions for Exercise 3. Read these directions and do what they say to do. When you reach the bottom of the page, turn over and mark correctly as many directions as you can in the time allowed. Ready! Go!"**

(8) By this method the fore-exercise is counted in as a part of the test. This increases the length of the test and involves a kind of reading material somewhat unlike the test proper.

V. DIRECTIONS FOR SCORING AND RECORDING

TEST 1. VOCABULARY

1. Score is number right. Accept as correct any marking which clearly indicates that the pupil knows the meaning of the word. The list of correct responses is given in the Key which is enclosed in each package of examinations. This Key is the consensus of opinion of a large number of intelligent persons as to the most satisfactory of the four possible responses to each word.

2. If more than one response is marked, count wrong.

3. Accept erasures and cancellations as correct if final marking is correct.

4. Count number of correct responses and place figure after word *Score* on page 3 of the examination booklet.

TEST 2. SENTENCE READING

Place the Key alongside the No-Yes column and mark with a check every item wrongly answered.

1. The score for this test is *rights minus wrongs*. This may be quickly figured by doubling the number of wrongs and subtracting from the *attempts*. Be careful not to subtract wrongs from *attempts*. Omitted items should be disregarded.

2. If all the noes or all the yeses are marked, the score is zero.

3. In all cases, when the number of wrongs is equal to or greater than the number of rights, the score is zero.

4. The score when once computed should be written after the word *Score* at the foot of page 4 of the examination booklet.

TEST 3. PARAGRAPH READING

1. Score is twice the number right.

2. Each item counts one point. The item must be wholly correct to count. An item is all that is included with a number. Thus, for paragraph 1, the first item includes all from figure 1 to figure 2; the second item, all from figure 2 to figure 3. There are 27 items in Test 3 of Form A and 28 items in Test 3 of Form B.

3. Ignore omitted items. Count the number of correct responses and multiply this number by 2 to find the score.

1. Total Score

When the three tests have been scored, the score for each should be recorded in its appropriate place in the upper right-hand corner of page 1. The total score is the sum of the scores for the several tests. The total score possible in either form is shown in Table 1.

TABLE 1

Exercise	Method of Scoring	Maximum Score	
		Form A	Form B
1	Rights	50	50
2	Rights minus Wrongs	40	40
3	Rights × 2	54	56
All		144	146

2. Class Record Sheet

On the Class Record Sheet record the names of all pupils examined. Under the heading "Scores, Test 1" record the number of correct answers as marked on page 3 of the tests. In the column headed "Test 2" record the score marked at the top of page 4. In the column headed "Test 3" record the scores marked at the top of page 8.

In completing the column headed "Ability by Grade," refer to the table of grade standards on page 6 and record in this column the grade to which the pupil's score most nearly approximates. In completing the other blanks on the sheet, observe the following directions: (1) Under "Age" give the exact present age in years and months. (2) "Years in School." Write 3, 3½, 4, 4½, 5, 5½, etc., to indicate the exact length of the time pupil has been in school, from the time he first entered any school to the date of the examination.

3. Qualities

a. **Scholarship.** If a pupil is average in his school studies, mark him *C*. If he is as good as the best 5 per cent of children you have known in the public schools, mark him *A*. If he is better than the poorest 75 per cent of the public school children you know, but not so good as the best 5 per cent, mark him *B*. If he is poorer than the best 75 per cent, — i.e., poorer than the middle 50 per cent, but not so poor as the poorest 5 per cent, — mark him *D*. If he is as poor as the poorest 5 per cent, mark him *E*. Proceed similarly with every other child.

b. **Intelligence.** In scoring pupils for intelligence, think of the skill with which they are able to meet new situations, both in school and out. The most intelligent pupil does not always make the highest marks in school, nor is the pupil with the highest marks the most intelligent child. Industry, good health, regular attendance, and other school conditions are important factors in school success.

Proceed in estimating the intelligence by the same method as was used in estimating scholarship, scoring each pupil *A*, *B*, *C*, *D*, or *E*, as indicated.

c. **Industry.** In rating a pupil for industry consider his ability to apply himself to his school work, both in school and out, to learning his lessons, and to doing other set tasks, so far as this may be known to you. Proceed as in the case of scholarship and intelligence and score each pupil *A*, *B*, *C*, *D*, or *E*, as indicated. Keep in mind that

A means superior, about the score of the best 5 per cent of children of that race and age.

B means high average, above the average, but not so good as *A*. The next best 20 per cent of the children make this score.

C means average, the score of the middle 50 per cent of that race and age.

D, low average, means below the best 75 per cent of school children of that race and age; i.e., below the middle 50 per cent, but not so poor as the lowest 5 per cent.

E means inferior, about the score of the poorest 5 per cent of the children of that race and age.

4. Median Score

It will sometimes be helpful to compute the median score for the class either in the "total score" or for each test separately. To obtain the median score for a small group, arrange the scores in the order of magnitude from the highest score to the lowest score. Then count up the middle score. This middle score is the median of the group.

VI. NORMS

The results of the test may be interpreted in terms of the grade norms given in Tables 2 and 3. These norms are derived from the use of the tests separately, in a large number of schools, and from their use in their present form in a limited number of schools. These norms apply to tests given in May.

TABLE 2

Grade Norms for Reading Examination: Sigma 3, Form A

Grade	5	6	7	8	9	10	11	12
Score	31	50	68	76	84	90	96	102

TABLE 3

Revised Grade Norms for Reading Examination: Sigma 3, Form B

Grade	5	6	7	8	9	10	11	12
Score	40	54	68	80	93	104	112	118

Age norms for Sigma 3, Forms A and B, for ages 10 to 20 years are shown in Tables 4 and 5. The figures in the first column opposite the numbers of years indicate the normal scores of individuals of even ages. Figures in succeeding columns to the right indicate normal score for months beyond even ages.

TABLE 4

Age Norms for Reading Examination: Sigma 3, Form A

	Month											
Year	0	1	2	3	4	5	6	7	8	9	10	11
10	16	17	19	20	21	22	24	25	26	27	29	30
11	31	32	34	35	37	38	40	41	43	44	46	47
12	49	50	51	53	54	56	57	58	60	61	63	64
13	65	67	68	69	69	70	70	71	72	72	73	73
14	74	75	75	76	76	77	77	78	78	79	79	79
15	80	80	81	81	81	82	82	83	83	84	84	84
16	85	85	85	85	86	86	86	86	87	87	87	87
17	88	88	88	88	89	89	89	90	90	90	91	91
18	91	91	92	92	92	92	92	92	93	93	93	93
19	93	93	94	94	94	94	94	94	94	95	95	95
20	95											

TABLE 5

Revised Age Norms for Reading Examination: Sigma 3, Form B

	Month											
Year	0	1	2	3	4	5	6	7	8	9	10	11
10	25	26	28	29	30	31	33	34	35	36	38	39
11	40	41	43	44	45	46	47	48	49	50	51	52
12	53	54	56	57	58	59	60	61	62	63	64	65
13	66	67	68	69	70	71	71	72	73	74	75	76
14	77	78	79	80	80	81	82	83	84	85	85	86
15	87	88	88	89	89	90	90	91	92	92	93	93
16	94	95	95	96	96	97	97	98	98	99	99	100
17	100	100	101	101	102	102	103	103	103	104	104	105
18	105	105	106	106	106	106	107	107	107	107	108	108
19	108	108	108	109	109	109	109	109	109	110	110	110
20	110											

VII. HOW TO USE RESULTS OF TESTS

1. For Grouping of Pupils

One of the functions of standard tests is to indicate the proper grouping of children in the school. However, the feasibility of placing children where the test indicates they should go depends upon what facilities can be made available.

Instruction is most efficient when it is suited to the ability and achievement of the pupils. Since reading is a basic subject, scores on a reading test will serve to group pupils for instruction, particularly if reinforced by scores on an intelligence test. By varying instructional methods and materials a teacher can handle three or more groups in one room.

2. For Measuring Achievement

The teacher needs guidance in the progress of her instruction in the form of measures of the achievement of pupils. The teacher's judgment of achievement may not be sufficient in itself because of its subjectivity. Scores on an achievement test in silent reading give not only the relative status of the pupils in the class, but also a comparison of the median achievement of the class with the median achievement in other school systems, and a statement of the achievement of each pupil in comparison with the norms.

3. For Analysis of Achievement

By tabulating the answers for the separate questions on the test the teacher can determine specifically and in detail the reading difficulties of each pupil. This information can be used to guide the teacher in the instruction of individual pupils. In the case of particular difficulty

more detailed tests must be used, and if necessary the assistance of a psychologist should be obtained.

4. For Measuring Progress

Grade norms are given, and comparison will show the standing of a pupil or class in terms of these standard norms. None of the norms given represent a particularly high degree of achievement, and the pupil or class which falls short of the norm is in need of attention in the subject.

After a lapse of time the test may be given again, to show if progress has been made in the interim. The difference between the initial and the final scores will then be the measure of improvement.

5. Caution

A caution should be urged against basing administrative action too exclusively on test scores. There is always the possibility that the child for some reason did not do himself full justice in the test. Cases of this sort are more likely to remain undetected in group testing than where an individual is examined alone. The test results should be interpreted in the light of all the supplementary information called for on the Class Record Sheet. In the few cases where there is clear disagreement between the test results and other data, the test may be repeated, or another reading test may be given. For the especially difficult case diagnostic reading tests should be used, and if necessary a psychologist should be called in to make the diagnosis.

The tests are not a substitute for common sense on the part of a teacher or superintendent. The educational examiner must use the test results to supplement, correct, or reinforce his observations. So used, they will add greatly to intelligent treatment of school problems.

The test will be of greatest value for the very dull and very bright pupils. Teachers generally overrate dull pupils and tend to promote them to work they cannot do. They tend to underrate superior children and to keep them from advancing as rapidly as they should. A class is most easily instructed when the pupils are properly classified — that is, are of the same grade of development. Dull children should learn tasks they can perform, and superior children should be released from the lockstep of a rigid grading system and set free for their most effective development.

	R	W	SCORE
Vocabulary			
Sentences			
Paragraphs			
TOTAL			

Haggerty Reading Examination

SIGMA 3: FORM A

FOR GRADES 6–12

Arranged and standardized by M. E. Haggerty and Laura C. Haggerty, University of Minnesota

---

My name is..... I am a.....
First name Last name Write boy or girl

This is the.....day of.....19..... I am.....years old.

My next birthday will be.....19..... I am in.....half of Grade.....

The name of my school is..... The name of my city (county) is.....

The name of my state is.....

Directions for Test 1

1. On the following pages are some words — each word is written like the word *red* in the next line, with some other words and phrases in parentheses.

   red (apple, color, to shine, green)

2. One of the words in the parentheses is a definition of the first word. You are to draw a line under the word or phrase which is the best definition, like this:

   red (apple, color, to shine, green)

3. Here are some words for practice. Look at the first word and then look at the words and phrases in the parentheses and draw a line under the word or phrase which is the best definition of the first word. The first one is marked as it should be. Mark all the others.

   a. orange (round, a fruit, sour, to eat)
   b. coffee (black, liquid, drink, bitter)
   c. soldier (man, man who fights, animal, gun)
   d. pupil (school child, boy, school, teacher)
   e. juggler (engineer, plowman, butcher, one who throws balls)

4. Now turn to page 2 and mark all the definitions correctly. Mark the definitions in order.

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TEST 1

VOCABULARY

Draw a line under the best definition for each word.

1 minister (servant, preacher, agent, to assist) 1
2 student (one who seeks knowledge, teacher, paper, book) 2
3 pardon (forgive, hinder, condemn, smile at) 3
4 island (section, part of the ocean, land surrounded by water, peak) 4
5 float (sail, sink, to fly, to stay on top of the water) 5

6 cataract (rushing, a waterfall, a basin, a spray) 6
7 aisles (houses, passages, churches, length) 7
8 parliament (a conference, to propose, to palliate, foreigners) 8
9 perilous (precious, dangerous, to spy, to invest) 9
10 fleet (navy, engineer, group of vessels, effective) 10

11 armor (metal, protective covering, soldiers, knights) 11
12 wharf (person who has no parents, landing place for ships, edge, animal) 12
13 brandy (wine, liquid, liquor, medicine) 13
14 noose (midday, a loop with knot, a gallows, a moose) 14
15 bristling (stubby, standing stiff, long, thin) 15

16 descend (to move downwards, to fall, to speed, to climb) 16
17 retort (a charge, to speak back, civility, to control) 17
18 calm (quiet, sleepy, night, restful) 18
19 cupola (church, high, schoolhouse, rounded dome) 19
20 swain (a prince, a country lover, swing, a student) 20

21 coast (shore line, outside, near the sea, boundary) 21
22 value (prize, worth, cost, amount) 22
23 deceitful (trustworthy, misleading, sincere, careful) 23
24 lapwing (flapping, crest, a bird, to waver) 24
25 dubious (certain, unsettled, determined, in danger) 25

26 pallid (morose, darkness, pale, placid) 26
27 dwindled (swindled, decreased, to consume, dwarflike) 27
28 derision (amazement, mockery, decision, to succumb) 28
29 navies (commerce, navigation, fleets of warships, canoes) 29
30 crevice (tiny, a fissure, rocky, mountains) 30

31 ardent (praise, passionate, relative, to wed) 31
32 scrupulous (populous, scrappy, conscientious, sacred) 32
33 steel (metal, mineral, hard substance, a kind of iron) 33
34 revive (to remember, to call back, to have life again, to return) 34
35 zinc (stove, to wash dishes in, soft lead, mineral) 35

☞ Go to top of next page.

36 hypothesis (a supposition, relation, provision, reflex)..... 36
37 apathy (pathetic, cold, indifference, dislike)..... 37
38 appreciate (lovely, to esteem duly, likable, to listen to)..... 38
39 epaulets (dresses, boy's garments, shoulder ornaments, apparel)..... 39
40 chalice (bowl, dew, a flower cup, vase)..... 40

41 blithe (springlike, juicy, joyous, full of melody)..... 41
42 accuracy (positive, necessary, mistakes, exactness)..... 42
43 extricate (liberal, entangle, set free, to fasten to)..... 43
44 primitive (forests, first, to postpone, to abolish)..... 44
45 sagacious (lacking in judgment, improved, wise, a remark)..... 45

46 phantom (a delight, like a phaeton, delusion, paltry)..... 46
47 facetious (friendly, morose, witty, stupid)..... 47
48 avidity (to vow, harshness, eagerness, to avoid)..... 48
49 dispel (to expend, to distrust, to scatter, to relieve)..... 49
50 delectable (eatable, expensive, delicious, fancy)..... 50

Score.....

Directions for Test 2

1. In the following pages are some sentences. Each sentence asks a question which can be answered by YES or NO. The sentences are written like this:

Are all men soldiers?.....YES NO

2. You are to draw a line under the right answer, like this:

Are all men soldiers?.....YES NO
Are some men soldiers?.....YES NO

3. Mark the right answer to these sentences by drawing a line under the YES or the NO. Do not mark both YES and NO. Mark only the right answer.

a. Is snow white?.....YES NO
b. Are elephants plants?.....YES NO
c. Can a pupil respond to a question?.....YES NO
d. Are multitudinous defects desirable?.....YES NO
e. May a hamlet be located in a province?.....YES NO

4. Now turn to page 4 and mark all the sentences correctly. Mark the sentences in order.

TEST 2

SENTENCE READING

Draw a line under the right answer to each question.

1. Can good children make promises? ..... YES NO
2. Do all people rent houses? ..... YES NO
3. Do laborers ever become exhausted? ..... YES NO
4. Are compasses used by mariners? ..... YES NO
5. Can children act in a serviceable manner? ..... YES NO
6. Do caravans always move with great speed? ..... YES NO
7. Is day always preceded by night? ..... YES NO
8. Can a boy be absorbed in a performance? ..... YES NO
9. Do vicious men plan revenge? ..... YES NO
10. Are all experiences humiliating? ..... YES NO
11. Are all sources of information reliable? ..... YES NO
12. Do some people have bright prospects? ..... YES NO
13. Do histories consist chiefly of prophecies? ..... YES NO
14. Are brazen persons the best companions? ..... YES NO
15. Can a man possess both valor and vigor? ..... YES NO
16. Are continuous sounds always harmonious? ..... YES NO
17. Are armed cruisers vessels of war? ..... YES NO
18. Is a battery a place where transports are made? ..... YES NO
19. Are venerable people sometimes invincible? ..... YES NO
20. Do lunatics render great service to their country? ..... YES NO
21. Are inquiring friends sometimes courteous? ..... YES NO
22. Should evildoers make amends? ..... YES NO
23. Do autumnal showers occur in the winter? ..... YES NO
24. Can prominent people administer relief? ..... YES NO
25. Are devices used in measuring time? ..... YES NO
26. Do ravenous monsters respond to persuasion? ..... YES NO
27. Are arsenals primarily for civic meetings? ..... YES NO
28. Are stalactites parts of dwellings? ..... YES NO
29. Are the prospects of good crops always remote? ..... YES NO
30. Do financial transactions involve monetary considerations? ..... YES NO
31. Are the adherents of law and order sometimes orthodox? ..... YES NO
32. May popular distrust be evident to a sovereign? ..... YES NO
33. Can a challenge to a duel be accepted? ..... YES NO
34. Is it mutinous to give succor to the helpless? ..... YES NO
35. Can the confidence of a discouraged man be restored? ..... YES NO
36. Are insidious people usually deceptive? ..... YES NO
37. May candidates live in hamlets? ..... YES NO
38. Does fidelity denote faithfulness? ..... YES NO
39. Do conciliating parties have pacific interests? ..... YES NO
40. Are assiduity and frugality undesirable characteristics? ..... YES NO

Right..... *Wrong*..... *Score*.....

Read these directions in order and do what they say to do.

1. The following pages contain a series of paragraphs with directions. You are to read the paragraphs and do what the directions tell you to do.

2. There are two kinds of directions. The first direction is to "*underline.*" Where this direction occurs, you are to draw a line under the correct word or phrase, as in this sample:

> He was an old-fashioned scholar who made the boys learn the Latin grammar by heart, and who flogged them when they failed.
>
> 1. Underline the correct word to complete this sentence:
>
> The "old-fashioned scholar" was young / jolly / severe / ignorant
>
> "Severe" is the correct word, and so you should draw a line under the word "severe." Do it before you read the next line.

3. The second direction is to "*check.*" Where this direction occurs, you are to put a check like this √ in front of the correct statement, as in this sample:

> 2. Check the true sentence:
>
> *a.* —The scholar was a boy.
> *b.* —The scholar taught history.
> *c.* —The scholar taught Latin.

4. The first and second statements are clearly false. The third one is true. So a check mark should be put in front of the third sentence. Put it on the line between the letter *c* and the first word of the sentence. Do it.

5. On the following pages read each paragraph as you come to it. Then read directions which follow the paragraph and do what the directions tell you to do. The correct answers to all questions are to be found by reading the paragraphs. Read the paragraphs as often as you need to.

6. Now turn the page. You will have about twenty minutes to work. Do all you can in that time, but work carefully. Make the correct mark for each direction.

TEST 3

PARAGRAPH READING

I

A carriage, drawn by four horses, dashed 'round the turn of the road. Within it, thrust partly out of the window, appeared the face of a little old man, with a skin as yellow as gold. He had a low forehead, small, sharp eyes puckered about with innumerable wrinkles, and very thin lips, which he made still thinner by pressing them forcibly together.

1. Underline the correct phrase:

   The carriage was drawn by
   - two mules
   - a fancy team
   - four horses
   - a gray mare

2. Check the sentence which is true:
   - *a.* — The carriage was slowly drawn around the turn.
   - *b.* — The carriage was turned over as it rounded the turn.
   - *c.* — The carriage was hurried violently around the turn.

3. Check the false statements:
   - *a.* — The man was large and bony.
   - *b.* — The man was middle-aged.
   - *c.* — The man was little and old.

II

There was the greatest interest throughout the ship, and not an eye was closed that night. As the evening advanced, Columbus took a position in the cabin of his vessel and kept up a continuous watch. About two o'clock he thought he beheld a light, glimmering at a great distance. Fearing his eager eyes might deceive him, he called a gentleman of the King's bedchamber, to inquire whether he saw such a light, and he admitted that he saw it.

1. Underline the word that shows what time it was:
   - midday
   - forenoon
   - night
   - afternoon

2. Underline the correct phrase:

   Columbus was
   - riding on a train
   - walking on land
   - living in a house
   - traveling in a boat

3. Check the statement which is true:
   - *a.* — Columbus called the King.
   - *b.* — The gentleman saw a light.
   - *c.* — All were asleep except Columbus.

4. Check one statement which is not true:
   - *a.* — Columbus watched continuously.
   - *b.* — Columbus first saw the light.
   - *c.* — No one except Columbus was interested.
   - *d.* — Columbus saw the light after midnight.

III

In the anteroom he found his attendant Anwold, who, taking the torch from the hand of the waiting-maid, conducted him with more haste than ceremony to an exterior and ignoble part of the building, where a number of small apartments, or rather cells, served for sleeping places to the lower order of domestics and to strangers of mean degree.

1. Check the true sentences:
   - *a.* — Anwold was in the basement.
   - *b.* — Anwold was in a waiting-room.
   - *c.* — Anwold was not to be found.

2. Check the true statements:
   - *a.* — The attendant took the light from the maid.
   - *b.* — The attendant led the way.
   - *c.* — Anwold held high his torch.

3. Underline the phrase making this sentence true:

   The poorest servants had sleeping quarters in:
   - the downstairs apartments
   - the worst part of the building
   - the attic

4. Underline the words which describe the strangers:
   - fashionable
   - guests of high repute
   - of low manner
   - poorly clad

☞ Go to top of next page.

IV

The great error in Rip's composition was an insuperable aversion to all kinds of profitable labor. It could not be for the want of assiduity or perseverance; for he would sit on a wet rock, with a rod as long and heavy as a Tartar's lance, and fish all day without a murmur, even though he should not be encouraged by a single nibble. He would carry a fowling-piece on his shoulder for hours together, trudging through woods and swamps, and up hill and down dale, to shoot a few squirrels or wild pigeons. He would never refuse to assist a neighbor, even in the roughest toil, and was a foremost man at all country frolics for husking Indian corn, or building stone-fences; the women of the village, too, used to employ him to run their errands, and to do such little odd jobs as their less obliging husbands would not do for them. In a word, Rip was ready to attend to anybody's business but his own; but as to doing family duty, and keeping his farm in order, he found it impossible.

1. Underline the one phrase which tells what Rip did not like to do:

   run errands
   work at home
   hunt
   fish

2. Check the one of the following sentences which is true:

   a. — Rip never showed perseverance.
   b. — Rip's neighbors disliked him.
   c. — Rip was an obliging neighbor.

3. Check the one of the following sentences which is true:

   a. — Rip owned a well-kept farm.
   b. — Rip disliked profitable labor.
   c. — Rip always avoided rough work.

4. Underline the words which describe Rip's character:

   careless
   good-natured
   thrifty

V

Yet, unless I greatly deceive myself, the general effect of this chequered narrative will be to excite thankfulness in all religious minds, and hope in the breasts of all patriots. For the history of our country during the last hundred and sixty years is eminently the history of physical, of moral, and of intellectual improvement. Those who compare the age on which their lot is fallen with a golden age which exists only in their imagination may talk of degeneracy and decay; but no man who is correctly informed as to the past will be disposed to take a morose or desponding view of the present.

1. Underline the phrase necessary to complete this sentence:

   The author believes his narrative will:
   - discourage the people
   - inspire hope in the people
   - leave the people indifferent

2. Check all the true statements among the following:

   a. — By "chequered narrative" the author refers to a historical narrative.
   b. — The author believes his country has improved in the past century.
   c. — The author believes all persons will accept his conclusions.

3. Check all the true statements among the following:

   a. — The author believes there has been degeneracy and decay in his country.
   b. — Well-informed persons will take a hopeful view of the present.
   c. — The "golden age" exists in imaginative minds.

4. Check the true statement:

   a. — The country had improved physically but not morally.
   b. — Correctly informed persons will take a morose view of the present.
   c. — The history of "our country" is encouraging to religious minds.

☞ Go to top of next page.

VI

The champions were therefore prohibited to thrust with the sword, and were confined to striking. A knight, it was announced, might use a mace or battle-ax at pleasure, but the dagger was a prohibited weapon. A knight unhorsed might renew the fight on foot with any other on the opposite side in the same predicament; but mounted horsemen were in that case forbidden to assail him. When any knight could force his antagonist to the extremity of the lists, so as to touch the palisade with his person or arms, such opponent was obliged to yield himself vanquished, and his armor and horse were placed at the disposal of the conqueror. A knight thus overcome was not permitted to take further share in the combat. If any combatant was struck down, and unable to recover his feet, his squire or page might enter the lists and drag his master out of the press; but in that case the knight was adjudged vanquished, and his arms and horse declared forfeited.

1. Underline the word which names the weapon that could not be used:

   sword
   mace
   dagger
   battle-ax

2. Check the one of these statements which is false:
   a. — A knight could fight on foot.
   b. — One knight could not injure another knight.
   c. — Mounted horsemen could fight only mounted horsemen.

3. Check the false statements:
   a. — A knight could be vanquished without being killed.
   b. — A knight's page could fight.
   c. — A vanquished knight retained his horse.

4. Check the true statements:
   a. — Champions were prohibited to use the sword.
   b. — An unhorsed knight could renew the fight.
   c. — An opponent was vanquished if his arms touched the palisade.
   d. — A knight dragged from the lists by his page was beaten.

VII

The speech of Judge Hoar was perfect, and to that handful of people, who heartily applauded it. When a good man rises in the cold and malicious assembly, you think, "Well, it would be more prudent to be silent. Why not rest on a good past? Nobody doubts your talent and power; and, for the present business, we know all about it, and are tired of being pushed into patriotism by people who stay at home." But he, taking no counsel of past things, but only of the inspiration of his today's feelings, surprises them with his tidings, his better knowledge, his larger view, his steady gaze at the new and future event, whereof they had not thought, and they are interested like so many children, and carried off out of all recollection of their malignant nonsense, and he gains his victory by prophecy, where they expected repetition. He knew beforehand that they were looking behind, and that he was looking ahead, and therefore it was wise to speak. What a godsend are these people to a town! and the Judge, what a faculty! — he is put together like a Waltham watch, or like a locomotive just finished from the Tredegar Works.

1. Check all true statements, if any:
   a. — The audience was inclined to look backward.
   b. — At the end of the speech the audience was hostile.
   c. — The speaker had a forward-looking mind.

2. Check all false statements, if any:
   a. — The author admires Judge Hoar.
   b. — The speaker surprised his audience.
   c. — The audience changed its attitude.
   d. — The speech was a failure.

3. Underline the words which best describe Judge Hoar:

   talented
   sagacious
   retrospective
   prophetic

4. Check the false statements:
   a. — The Judge talked about an old subject in a new way.
   b. — The audience was wiser than the Judge.
   c. — The Judge was a burden to his community.

[8] *Right*----------× 2 = *Score*----------

	R	W	SCORE
Vocabulary			
Sentences			
Paragraphs			
TOTAL			

Haggerty Reading Examination

SIGMA 3: FORM B

FOR GRADES 6–12

Arranged and standardized by M. E. Haggerty and Laura C. Haggerty, University of Minnesota

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My name is..... I am a.....
First name Last name Write boy or girl

This is the.....day of.....19..... I am.....years old.

My next birthday will be.....19..... I am in.....half of Grade.....

The name of my school is..... The name of my city (county) is.....

The name of my state is.....

Directions for Test 1

1. On the following pages are some words — each word is written like the word *red* in the next line, with some other words and phrases in parentheses.

   red (apple, color, to shine, green)

2. One of the words in the parentheses is a definition of the first word. You are to draw a line under the word or phrase which is the best definition, like this:

   red (apple, color, to shine, green)

3. Here are some words for practice. Look at the first word and then look at the words and phrases in the parentheses and draw a line under the word or phrase which is the best definition of the first word. The first one is marked as it should be. Mark all the others.

   a. orange (round, a fruit, sour, to eat)
   b. coffee (black, liquid, drink, bitter)
   c. soldier (man, man who fights, animal, gun)
   d. pupil (school child, boy, school, teacher)
   e. juggler (engineer, plowman, butcher, one who throws balls)

4. Now turn to page 2 and mark all the definitions correctly. Mark the definitions in order.

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TEST 1

VOCABULARY

Draw a line under the best definition for each word.

1 labor (look sad, work, liquor, to read) 1
2 victory (fight, to win a battle, sign, to exclaim) 2
3 captain (wears cap, person who commands, tall man, master) 3
4 cabin (small house, building, to peep, a ship) 4
5 tea (drink made from leaves, afternoon party, food, letter) 5

6 route (way to be traveled, march, pass, distance) 6
7 abundance (plenty, multitude, fruitful, several) 7
8 artificial (artful, not natural, to narrate, crafty) 8
9 plantation (large field, farm in South, cotton, place for grain) 9
10 shriek (to laugh, to seize, to spoil, to scream) 10

11 conceal (to hunt, to hide, to watch, to grasp) 11
12 herbage (a pasture, green plants, forests, agriculture) 12
13 embark (troops, fortune, to board a vessel, to undertake) 13
14 idle (lazy, quiet, not working, dreaming) 14
15 pierce (an enemy, a passage, a mystery, to penetrate) 15

16 enchanted (fascinated, connected, controlled, relieved) 16
17 keel (a molding, to project, bottom of ship, material) 17
18 adjusted (promised, impaired, arranged, to hold) 18
19 chivalry (kindness, cavalry, to be fair, just) 19
20 legacy (a gift by will, a delegate, a parchment, a loan) 20

21 knave (rascal, like a knife, well known, to be honest) 21
22 celestial (flowers, heavenly, above, splendid) 22
23 rare (a quality, character, precise, unusual) 23
24 cordial (sincere, helpful, trustworthy, true) 24
25 liberated (united, set free, to be liberal, destroyed) 25

26 ballad (musical, soloist, symphony, simple song) 26
27 monologue (speaking alone, to mumble, epilogue, to traverse) 27
28 beguile (to teach, to deceive, to be sorry, to disturb) 28
29 climate (temperature, atmospheric conditions, to be very hot, to be cold) 29
30 formality (substance, ceremony, extreme, regularity) 30

31 patriarch (family, paternal, an elder, a patriot) 31
32 conflagration (a fire, a large space, to heat, fiercely) 32
33 assiduity (diligence, hopeful, to work, scholar) 33
34 obstacles (observe, spectacles, opposition, to obviate) 34
35 nocturnal (poisonous, nightly, sentiment, insects) 35

☞ Go to top of next page.

36 sublime (weakness, human, exalted, magnitude) 36
37 enigma (a riddle, contrivance, taint, brand) 37
38 harbinger (a forerunner, an athlete, springtime, harbor) 38
39 diameter (circumference, parallel, thickness, center) 39
40 spherical (geometry, globular, to extend, around the earth) 40

41 dexterity (adroitness, speed, usefulness, lack of skill) 41
42 animosity (to seek, fear, to love, hatred) 42
43 coercion (conspiracy, strategy, compulsion, attraction) 43
44 inclose (to add to, to include, to furnish, to fence) 44
45 implacable (to subdue, relieved, uncertain, unrelenting) 45

46 intrigue (to entice, a plot, secrecy, to atone) 46
47 bantering (to travel slowly, fussing, pleasantry, to disturb) 47
48 omniscient (universal, all-knowing, infinite, ominous) 48
49 derisive (silly, scornful, troublesome, miserable) 49
50 hiatus (an animal, a calamity, dread, a gap) 50

Score .....

Directions for Test 2

1. In the following pages are some sentences. Each sentence asks a question which can be answered by YES or NO. The sentences are written like this:

Are all men soldiers? ..... YES NO

2. You are to draw a line under the right answer, like this:

Are all men soldiers? ..... YES NO
Are some men soldiers? ..... YES NO

3. Mark the right answer to these sentences by drawing a line under the YES or the NO. Do not mark both YES and NO. Mark only the right answer.

a. Is snow white? ..... YES NO
b. Are elephants plants? ..... YES NO
c. Can a pupil respond to a question? ..... YES NO
d. Are multitudinous defects desirable? ..... YES NO
e. May a hamlet be located in a province? ..... YES NO

4. Now turn to page 4 and mark all the sentences correctly. Mark the sentences in order.

TEST 2

SENTENCE READING

Draw a line under the right answer to each question.

1. Are shingles used on houses ?..... YES NO
2. Are all fabrics made of wool ?..... YES NO
3. Would you trust a dishonest character ?..... YES NO
4. Are the opponents in controversy always enemies ?..... YES NO
5. Are victorious persons sometimes accorded honor ?..... YES NO

6. Do the follies of children ever astound their parents ?..... YES NO
7. Do all inland cities have marvelous dwellings ?..... YES NO
8. Is the protection of citizens desired by most mayors ?..... YES NO
9. Is counterfeited money coveted by honest folk ?..... YES NO
10. Can a pestilence be dangerous and destructive ?..... YES NO

11. Do physicians assist in combating disease ?..... YES NO
12. Are magnanimous persons always destructive ?..... YES NO
13. Do travelers occasionally perish in a severe climate ?..... YES NO
14. Is all exercise violently taken ?..... YES NO
15. Should valuable documents be preserved ?..... YES NO

16. Do manuscripts convey information ?..... YES NO
17. May an anonymous letter reach its destination ?..... YES NO
18. Do the disputations of men sometimes involve theories ?..... YES NO
19. May there be contention among members of a jury ?..... YES NO
20. Does barren land have luxuriant vegetation ?..... YES NO

21. Is the intensity of heat determined by a scepter ?..... YES NO
22. May an officer arrest a vagrant youth ?..... YES NO
23. Do extinguished lights give forth great brilliance ?..... YES NO
24. Are all laws enacted with facility ?..... YES NO
25. Do loud boastings ever give offense ?..... YES NO

26. Is citron found in craters ?..... YES NO
27. May the route of a regiment be disclosed by designing impostors ?..... YES NO
28. Are good citizens insensible to progress ?..... YES NO
29. Do embezzlers practice fraudulent activities ?..... YES NO
30. Do controversies determine the velocity of a stream ?..... YES NO

31. Are disasters ever inexplicable ?..... YES NO
32. Do despots invest subordinates with great authority ?..... YES NO
33. Is petty larceny conducive to good repute ?..... YES NO
34. Were primeval forests devoid of trees ?..... YES NO
35. Should a heavily laden horse be vigorous ?..... YES NO

36. Do imbeciles have high intelligence ?..... YES NO
37. Is a turbid stream devoid of sediment ?..... YES NO
38. May a deliberate man advocate an embargo ?..... YES NO
39. Does grim determination invariably bring about reconciliation ?..... YES NO
40. Is perspicacity a desideratum of constructive statesmanship ?..... YES NO

Right..... *Wrong*..... *Score*.....

Directions for Test 3

Read these directions in order and do what they say to do.

1. The following pages contain a series of paragraphs with directions. You are to read the paragraphs and do what the directions tell you to do.

2. There are two kinds of directions. The first direction is to "*underline.*" Where this direction occurs, you are to draw a line under the correct word or phrase, as in this sample:

   He was an old-fashioned scholar who made the boys learn the Latin grammar by heart, and who flogged them when they failed.

   1. Underline the correct word to complete this sentence:

      The "old-fashioned scholar" was young / jolly / severe / ignorant

   "Severe" is the correct word, and so you should draw a line under the word "severe." Do it before you read the next line.

3. The second direction is to "*check.*" Where this direction occurs, you are to put a check like this √ in front of the correct statement, as in this sample:

   2. Check the true sentence:
      a. —The scholar was a boy.
      b. —The scholar taught history.
      c. —The scholar taught Latin.

4. The first and second statements are clearly false. The third one is true. So a check mark should be put in front of the third sentence. Put it on the line between the letter *c* and the first word of the sentence. Do it.

5. On the following pages read each paragraph as you come to it. Then read directions which follow the paragraph and do what the directions tell you to do. The correct answers to all questions are to be found by reading the paragraphs. Read the paragraphs as often as you need to.

6. Now turn the page. You will have about twenty minutes to work. Do all you can in that time, but work carefully. Make the correct mark for each direction.

TEST 3

PARAGRAPH READING

I

They went across the hall to a door at the back of the house. It opened before them and disclosed a long, bare, melancholy room, made barer still by lines of desks. At one of these a lonely boy was reading near a feeble fire; and Scrooge sat down upon a form, and wept to see his poor forgotten self as he had used to be.

1. Underline the words telling where the door was:

   in the front
   at the side
   in the rear
   by the porch

2. Underline the true statement:

   The room was cheery.
   The room had desks in it.
   The room was filled with beautiful pictures and flowers.

3. Check the one of the following statements which is true:

   a. — There were many boys getting their lessons.
   b. — One lonely lad was reading by a fire.
   c. — Only one person crossed the hall.

4. Underline the statements which are true:

   Scrooge cried.
   Scrooge sat down.
   Scrooge laughed aloud.

II

Maggie soon thought she had been hours in the attic, and it must be tea time, and they were all having their tea, and not thinking of her. Well, then, she would stay up there and starve herself — hide herself behind the tub and stay there all night; and they would all be frightened, and Tom would be sorry. Thus Maggie thought in the pride of her heart, as she crept behind the tub; but presently she began to cry again at the idea that they didn't mind her being there. If she went down again to Tom now — would he forgive her? Perhaps her father would be there, and he would take her part.

1. Check the statement which describes Maggie's thoughts about Tom:

   a. — She hated him.
   b. — She wondered if he would forgive her.
   c. — She wanted her father to punish him.
   d. — She did not like Tom.

2. Underline the phrase which tells what Maggie hoped her father would do:

   punish Tom
   scold her
   take her part
   send her to bed

3. Check the false statement:

   a. — Maggie was proud.
   b. — Maggie was sorry for herself.
   c. — Maggie was brave and did not cry.

4. Check the true statements:

   a. — Maggie thought it was tea time.
   b. — Maggie thought she was forgotten.
   c. — Maggie enjoyed being alone.

III

He had in his house a housekeeper past forty, a niece under twenty, and a lad for the field and market place, who used to saddle the hack as well as handle the pruning hook. The age of this gentleman of ours was bordering on fifty; he was of a hardy habit, spare, gaunt featured, a very early riser and a great sportsman.

1. Underline the words which describe the housekeeper:

   very old
   a young woman
   middle-aged
   a kindly soul

2. Check the statement which is true:

   a. — The gentleman lived alone.
   b. — He was very fond of his niece.
   c. — The niece was young.
   d. — The lad was tall and slender.

☞ Go to top of next page.

3. Check the false statement:
   a. — He employed a boy to assist in the house.
   b. — The lad worked in the fields and did the marketing.
   c. — The gentleman had need for help.

4. Underline the phrases which describe the man:

   a late sleeper
   fond of sports
   thin and spare

IV

For my own part, as the gondola slipped away from the blaze and bustle of the station down the gloom and silence of the broad canal, I forgot that I had been freezing two days and nights; that I was at that moment very cold and a little homesick. I could at first feel nothing but that beautiful silence, broken only by the star-silvered dip of the oars. Then on either hand I saw stately palaces rise gray and lofty from the dark waters, holding here and there a lamp against their faces, which brought balconies, and columns, and carven arches into momentary relief, and threw long streams of crimson into the canal. I could see by that uncertain glimmer how fair was all, but not how sad and old; and so, unhaunted by any pang for the decay that afterward saddened me amid the forlorn beauty of Venice, I glided on.

1. Check the correct sentence:
   a. — The author was in a familiar scene.
   b. — The author was in New York City.
   c. — The author was in Europe.

2. Underline the one of these phrases which shows how light it was:

   very light
   very dark
   dimly lighted

3. Check the one of the following sentences which is true:
   a. — The scene made the author sad.
   b. — The scene was commonplace.
   c. — The author enjoyed the scene.
   d. — The author was warm and comfortable.

4. Check the true statement:
   a. — The canal was very noisy.
   b. — The buildings were low and brilliantly lighted.
   c. — The writer saw how old and decayed the city was.
   d. — There were lofty houses on both sides of the canal.

V

Old Sandy seemed to know that this was his last opportunity. With a marvelous burst of speed he plunged through the belated dogs that were hunting for the lost drag, slipped through the fence, and went back by the spectators like a flash. There was a tremendous outburst of music from the dogs as they sighted him, and for one brief moment Joe was afraid that Jonah would be thrown out. The next instant the dog appeared on the fence, and there he sighted the fox. It was then that the courage and speed of Jonah showed themselves. Nothing could have stood up before him. Within a hundred yards he ran into the fox. Realizing his fate, Old Sandy leaped into the air with a squall, and the next moment the powerful jaws of Jonah had closed on him.

1. Underline the word that tells what Joe was:

   dog
   man
   fox
   horse

2. Check the false sentences:
   a. — The writer is describing a battle.
   b. — The writer is describing a fox chase.
   c. — The writer is describing a race.

3. Check each of these sentences which is true:
   a. — Joe caught a fox.
   b. — Old Sandy escaped.
   c. — More than one person saw the chase.
   d. — Jonah was a poor runner.

4. Check each of these sentences which is false:
   a. — Old Sandy was too tired to run.
   b. — Jonah ran under the fence.
   c. — None of the dogs barked.
   d. — Jonah caught the fox.

☞ Go to top of next page.

VI

This government, the offspring of our own choice, uninfluenced and unawed, adopted upon full investigation and mature deliberation, completely free in its principles, in the distribution of its powers, uniting security with energy, and containing within itself a provision for its own amendment, has a just claim to your confidence and your support. Respect for its authority, compliance with its laws, acquiescence in its measures, are duties enjoined by the fundamental maxims of true liberty. The basis of our political systems is the right of the people to make and to alter their constitution of government; but the constitution which at any time exists, till changed by an explicit and authentic act of the whole people, is sacredly obligatory upon all. The very idea of the power and the right of the people to establish government presupposes the duty of every individual to obey the established government.

1. Check each of the following which is true according to the author:
   - *a.* — The people should not make their own laws.
   - *b.* — True liberty demands that people obey the law and respect authority.
   - *c.* — The people have no right to change the constitution of their government.
2. Check the statement which is false:
   - *a.* — "Our political systems" are founded on the right of the people to alter their constitution.
   - *b.* — The government of which the author speaks makes no provisions for being changed.
   - *c.* — The people are obligated to be loyal to the government.
3. Check all true statements:
   - *a.* — This government was forced on the people.
   - *b.* — This government has power.
   - *c.* — This government was adopted deliberately.
4. Check all false statements:
   - *a.* — A minority may change the constitution.
   - *b.* — The government makes no provision for its own growth.
   - *c.* — True liberty does not imply duties.
   - *d.* — The people have the right to establish government.

VII

I confess I did not much like this decision of the gypsy; I felt very slight inclination to leave the town behind, and to venture into unknown places in the dark night, amidst rain and mist, for the wind had now dropped and the rain began again to fall briskly. I was, moreover, much fatigued, and wished for nothing better than to deposit myself in some comfortable manger where I might sink to sleep, lulled by the pleasant sound of horses and mules dispatching their provender. I had, however, put myself under the direction of the gypsy, and I was too old a traveler to quarrel with my guide under the present circumstances. I therefore followed close at his crupper, our only light being the glow emitted from the gypsy's cigar; at last he flung it from his mouth into a puddle, and we were then in darkness.

1. Underline the phrases which cannot be used to complete this sentence correctly:

   The gypsy decided:
   - to leave town for unknown parts
   - to stay in town
   - to return to a known place
   - to leave town alone
2. Underline all the words which describe the traveler:
   - tired
   - sleepy
   - joyous
   - doubtful
3. Check the true statement:
   - *a.* — The writer fully approved the decisions of the gypsy.
   - *b.* — The writer desired to sleep in a well-kept room.
   - *c.* — The writer followed closely after the gypsy.
   - *d.* — The writer directed the gypsy to go forward.
4. Check the true statements:
   - *a.* — The writer had perfect confidence in the gypsy.
   - *b.* — The writer was an old traveler.
   - *c.* — The writer did not know where the gypsy was going.
   - *d.* — The gypsy did not carry a lantern.

 *Right*_____ × 2 = *Score*_____

Traxler Silent
Reading Test
for Grades 7 to 10
FORM 1

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TRAXLER SILENT READING TEST, FORM 1

For Grades 7 to 10

By Arthur E. Traxler

Do not write on the test, nor turn the page, until you are asked to do so by the examiner. Fill the blanks below and then read the directions.

Name..... Date.....
Last First

School..... City..... Grade.....

Age..... Sex..... Teacher.....
Years Months (M. or F.)

General Directions.—This is a test to find out how well you can read. It has three parts. Complete directions for the test are given at the beginning of each part. Read all directions carefully and follow them exactly.

Directions for Part I.—The first part of the test contains a story for you to read and some questions for you to answer after you have read the story. **When the signal is given (but not before), turn to page 3.** Most of that page contains some questions printed upside down. Do **not** try to read the questions, but look at the **bottom** of the page where the story begins. The examiner will read those lines aloud and you will read them silently. When the examiner reaches the end of the last line, he will stop reading and you will turn to the next page and continue to read. From time to time, the examiner will say "mark." Put a circle around the word you are reading when that signal is given, and **keep right on reading.** Do not read any part of the story more than once. Read as fast as you can read **understandingly,** but no faster, as **you cannot answer the questions unless you know what you have read.**

When you finish reading, turn back to page **3,** turn the page around, and answer the questions which are based on the story.

Now wait for the signal to turn to page 3. When everyone is ready the examiner will say: "TURN TO PAGE 3 AND LOOK AT THE BOTTOM OF THE PAGE."

Scores will be recorded below

Part I	1.	Reading rate .....
	2.	Story comprehension .....
Part II	3.	Word meaning .....
Part III	4.	Paragraph comprehension .....
	5.	Total comprehension (total of 2, 3, and 4) .....
	6.	TOTAL SCORE (total of 1 and 5) .....

935-16p

5. The bear retreated from the musk oxen as if in terror because she (1) was afraid of the bulls (2) wanted them to think she had gone away (3) was anxious for the safety of her cub (4) hoped to be pursued (5) was in a playful mood.....( )

6. After the bear left the musk ox herd, she moved (1) out upon the open plain (2) toward a range of mountains (3) along a river (4) down a narrow gorge (5) toward the open sea.....( )

7. When she heard the tinkle of breaking ice, the bear (1) couched low (2) ran toward the sound (3) looked all about her (4) sniffed the air (5) pushed the cub to safety.....( )

8. As the bear crept upon the seal, the cub (1) followed behind her (2) stood at a distance and watched (3) crouched behind some ice (4) whimpered in anxiety (5) began to howl.....( )

9. The seal was prepared for an attack from (1) any side (2) the land (3) the open sea (4) any direction except the south (5) the north and east.....( )

10. When the seal went down into the water, the bear (1) was obliged to loosen her grip (2) sprang after him (3) found the odds too much for her (4) sank her teeth deeper into the seal (5) swam toward him.....( )

(When you have finished the above questions, close the booklet and wait for further instructions.)

Score = number right.....× 2 =.....

Read the story beginning at the bottom of this page *before* you read these questions.

These are the questions on the reading material. **After you have read the story,** you will turn back to this page, turn it around so that the questions are right side up, and then answer the questions on this page and on page **2.** Do **not** read the questions before you read the story.

QUESTIONS ON THE STORY

Directions.—Underline the word or phrase which should be used to complete each of the ten sentences on this page and the opposite page, and place its number in the parenthesis at the end of the line. **Do not turn back to the reading exercise.**

Example.—This is a test of (1) arithmetic (2) spelling (3) reading (4) geography (5) history.....(3)

---

1. The cub whimpered because (1) he was cold (2) he was tired (3) he was hungry (4) he was lost (5) he was afraid.....( )

2. The first kill the bear made was (1) a pair of ruffed grouse (2) a pair of ptarmigan (3) a white rabbit (4) a young deer (5) a musk ox.....( )

3. When the bear caught sight of the musk oxen she (1) stopped and watched them (2) rushed at them at once (3) approached them cautiously (4) tried to creep up to them (5) made a wide detour around them.....( )

4. As soon as they saw the bear, the little bulls (1) swung to meet her (2) rushed at her (3) scattered in all directions (4) set up a loud bellowing (5) deserted the cows and calves.....( )

(Continue with exercise number 5 on the opposite page.)

NANOOK AND HER CUB

It was winter in the far north. A wasteland of rocks and ice and snow stretched for many miles in every direction. The black-violet sky

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above contained many brilliant stars and a frost-white moon. On the 0
earth below, a great white bear wandered restlessly through the night in 1
search of something to eat. This unending search for food was the price
that Nanook, a she-bear of the Arctic, paid for life. The half-grown cub 2
who followed her whimpered hungrily in his throat from time to time, 3
for it had been more than a day since he had eaten. 3

At his cry, the grim mother checked her strike; but even as she 4
stopped, her nostrils caught the faint, unmistakable scent of warm flesh 5
and blood. Swinging her long, pointed head to one side, she moved 5
silently, on paws padded with thick white hair, toward a hummock of 6
new-fallen snow. Just as she reached it, the little hillock exploded like 6
a bomb and out whirred a pair of ptarmigan, birds like the ruffed grouse 7
of lower latitudes, but white as the snow in which they had hidden. 8
Before they had freed themselves from the snow, the great ice-bear struck 8
them down. A moment later a cloud of feathers was all that was left of 9
them, and the bears wandered on through a country desolate as the surface 10
of the burnt-out moon. 10

Hours later, as the two reached a plateau high above the confusion 11
of ice and rock, there came to the straining nostrils of the leader a sweet, 11
warm reek as of cattle, and scattered black figures showed dimly against 12
the snow. At the sight and scent, the huge bear shot forward like a 13
sprinter from his mark. As she charged, a score of sturdy, wide-horned 13
little bulls swung to meet her, with the swift discipline of a musk ox herd. 14
They had short legs, hair so long that it trailed on the snow, and all the 15
swift alertness of mountain sheep. Behind the bulls was an inner circle 15
of cows, and within this circle were a dozen frightened calves. So 16
swiftly had the trained herd acted, that by the time the bear reached them, 16
she was confronted by an unbroken circle of sharp curved horns. 17

Hungry as she was, with a whimpering cub at her flank, the gaunt 18
bear stopped—as well she might, for not even the grim white wolf, the 19
craftiest of arctic hunters, can penetrate the defense of a musk ox herd. 19
Around and around the bristling hedge of horns she paced, but there 20
was never a break in the threatening circle. With little grunts of de- 2
fiance the veteran fighters of the herd, who had faced danger many times 21

(Go to next page.)

before, heartened the younger cows and the trembling calves behind 22
them, and everywhere their front remained unbroken. Once or twice 22
the bear rushed forward, as if intending to charge in spite of all conse- 23
quences, on the chance that some over-enthusiastic bull would leave the 23
safety of the circle and meet her half-way. Again turning her back, she 24
retreated slowly as if in sudden terror, hoping to be pursued, but the 25
herd paid no attention to any such simple stratagems. Only a line of 25
lowered glaring eyes and a ring of fatal horns confronted her until at 26
last, with many a backward glance, she lurched away, followed by her 27
cub, in search of easier prey. 27

Disappointed by the musk oxen, the bear peered into every nook 28
and eranny as she moved across the frozen wilderness hunting for food. 28
Her course led her at last through a maze of basalt boulders, ice-blocks and 29
pans toward a stretch of open sea. As she approached that lonely water 30
under the orange glare of the Northern Lights, her keen ears caught the 30
tiny tinkle of breaking ice where the black water elose to the shore had 31
begun to skim over in the cold. At the sound, the bear couched low, 32
with the cub imitating her every movement. In the dim light, a long 32
dark shape floundered awkwardly up on the shore. There poised where 33
he could see all about him and shoot down into the water at the first 34
sign of danger, lay a huge harp seal—the "saddleback" of the sealers. 34
This was an old bull who weighed all of 800 pounds. He had a dingy 35
white body blotched with black, and was far larger than the spotted 36
leopard seal, the ringed seal, or even the gray-bearded seal. 36

Without a sound, the white bear disappeared in the dark like a ghost, 37
while her cub crouched behind a hillock of iee. Making a long detour, 37
the fierce huntress reached the shore at a point hidden by heaped masses 38
of ice from the sight of the seal and, slipping soundlessly into the water, 39
swam far out, only her black muzzle showing above the surface. When 39
at last she reached a point in the bay opposite the plaee where the 40
saddleback was, she swam toward the shore, silent as a shadow. 41

The great seal lay with his back to the water, continually testing the 41
air with his sensitive nostrils and ready at the first sight, sound, or scent 42
of danger to rush into the water. Wary as he was, he suspected no 43

(Turn to next page.)

149 danger from the open sea which he had just left. Suddenly, his keen 43
ears caught the sound of dripping water and a little grating noise at the 44
edge of the shore, which might have been made by floating ice. How- 45
ever, the motto of the wise seal is: "Make sure!" As for the unwise, 45
they are dead, victims of their own imprudence. 46

Wherefore, this one, at the first slight sound behind him, swung 46
around, only to see a vast shape creeping toward him. At the sight, the 47
seal hurled his mottled bulk toward the open water. Swift as he was, 48
the white death below was swifter. Even as the saddleback reached the 48
water, the fierce muzzle of the bear shot forward like a striking snake 49
and gripped the seal's round head. Despite the bear's weight, the rush 49
of the saddleback carried her down into the black water. Few land 50
animals, indeed, would dare the depths with such a swimmer. Maddened 51
by hunger, however, the bear paid no attention to the odds of the water 51
that were against her, but sank her teeth deeper and deeper through the 52
seal's thick pelt. A moment later, pushing the lifeless body of her prey 53
before her, she swam slowly up through ten feet of black water laced and 53
lit by the phosphorescence of arctic seas. Then she landed and with- 54
out effort swung the body of the seal out upon the rock, and hissed sharply 55
through the still air. At the sound her hungry cub hurried from his 55
hiding place so fast that he rolled over and over down the slope like a 56
ball, nor ever stopped until he joined her in a feast of rich, pure, life- 57
giving seal meat. 57

When at last they were both full-fed, the old bear dragged the carcass 58
along the shore and hid it in a cave near the top of an ice-cliff which jutted 58
out over the water. There, curled up together, the two slept, plunged in 59
that snug content which food and warmth bring. 60

(Now turn back to page 3 and answer the questions.)

This story is adapted from *Nanook* by Samuel Scoville, Jr., of Philadelphia, and is used with the author's permission.

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PART II

WORD MEANING

Directions.—In each of the exercises below, you should read the sample sentence or expression, then read the five words or phrases following it, and select the one whose meaning is most nearly like the meaning of the word which is underlined in the sentence. Draw a line under the word thus selected and place its number in the parenthesis at the right. Notice the example:

Example.—They will invite him to go.
(1) tell (2) command (3) ask (4) forbid (5) select (3)

---

1. They adapt themselves well.
(1) please (2) adjust (3) carry (4) conduct (5) consider ( )

2. The apparatus is expensive.
(1) appliance (2) clothing (3) reading matter (4) engine (5) experiment ( )

3. We aspire to rule.
(1) refuse (2) greatly fear (3) eagerly desire (4) ask (5) appear often ( )

4. The avarice of the man is very great.
(1) pride (2) wealth (3) power (4) courage (5) greed ( )

5. They barter goods.
(1) buy (2) manufacture (3) loan (4) exchange (5) own ( )

6. Betake to the country.
(1) ride (2) go (3) wander (4) send (5) return ( )

7. The government is in chaos.
(1) control (2) order (3) confusion (4) excellent condition (5) defeat ( )

8. The commendation is deserved.
(1) success (2) blow (3) popularity (4) good fortune (5) praise ( )

9. His action received condemnation.
(1) approval (2) applause (3) censure (4) sympathy (5) contempt ( )

10. They conspire against the ruler.
(1) plot (2) fight (3) move (4) speak openly (5) write ( )

(Go to next page.)

11. That was a dastardly trick.
(1) simple (2) cowardly (3) clever (4) cruel (5) foolish ( )

12. Defer the payment.
(1) make (2) postpone (3) request (4) demand (5) record ( )

13. We depute you to act.
(1) forbid (2) ask (3) appoint (4) advise (5) beg ( )

14. It is easy to dupe him.
(1) lose (2) forget (3) deceive (4) win (5) defeat ( )

15. Boilers emit steam.
(1) eject (2) contain (3) make (4) retain (5) use ( )

16. A sad epitaph.
(1) reply (2) verse (3) sermon (4) message (5) inscription ( )

17. We exhort you to go.
(1) urge (2) wish (3) forbid (4) expect (5) hire ( )

18. A fervent prayer.
(1) long (2) intelligent (3) loud (4) hypocritical (5) ardent ( )

19. He went into a frenzy.
(1) inn (2) fright (3) trance (4) fury (5) carriage ( )

20. You should gauge its speed.
(1) know (2) measure (3) observe (4) match (5) retard ( )

21. He was defeated by guile.
(1) deception (2) overwhelming strength (3) jealousy (4) hatred (5) enemies ( )

22. A hitch in the plans.
(1) error (2) surprise (3) disagreement (4) obstruction (5) reorganization ( )

23. Impenetrable gloom.
(1) faint (2) starlit (3) fearful (4) hostile (5) dense ( )

24. The indolence of the boy.
(1) intelligence (2) laziness (3) poverty (4) sorrow (5) strength ( )

25. An intricate passage.
(1) deep (2) dark (3) interesting (4) complicated (5) narrow ( )

(Turn to next page.)

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26. The legacy is large.
(1) fortune (2) request (3) estate (4) stadium (5) bequest ( )

27. A loathsome scene.
(1) beautiful (2) quiet (3) fearful (4) peaceful (5) disgusting ( )

28. A meager salary.
(1) large (2) desirable (3) scanty (4) monthly (5) adequate ( )

29. A minor position.
(1) important (2) lesser (3) dangerous (4) insecure (5) influential ( )

30. We can muster a thousand.
(1) assemble (2) defeat (3) see (4) manage (5) feed ( )

31. A notch in the wood.
(1) knot (2) stain (3) nail (4) crack (5) nick ( )

32. An occidental custom.
(1) eastern (2) Spanish (3) useless (4) western (5) old ( )

33. His plaint was heard.
(1) voice (2) musical instrument (3) oration (4) howl (5) complaint ( )

34. A precise statement.
(1) angry (2) forceful (3) false (4) accurate (5) hasty ( )

35. His prowess was great.
(1) joy (2) ambition (3) grief (4) bravery (5) stature ( )

36. The reaper is here.
(1) harvester (2) mower (3) planter (4) farmer (5) tractor ( )

37. A deep reverie.
(1) valley (2) stream (3) daydream (4) mountain lake (5) secret ( )

38. A salutary suggestion.
(1) serious (2) humorous (3) ridiculous (4) happy (5) wholesome ( )

39. The roe darted away.
(1) rabbit (2) quail (3) boat (4) mountain goat (5) deer ( )

40. The boat was on the shoal.
(1) surface (2) sunken log (3) sea (4) ocean bottom (5) shallow place ( )

(Go to next page.)

41. The liquid will solidify soon.
(1) explode (2) boil (3) harden (4) cool (5) evaporate ( )

42. Stifle the suggestion.
(1) publish (2) observe (3) consider (4) suppress (5) forget ( )

43. They wish to subvert the law.
(1) obey (2) destroy (3) pass (4) avoid (5) break ( )

44. The supremacy of arms.
(1) superiority (2) clash (3) strength (4) brilliance (5) use ( )

45. The beauty of the tabernacle.
(1) mountain (2) parsonage (3) temple (4) monastery (5) painting ( )

46. The trend is to the west.
(1) inclination (2) view (3) landscape (4) road (5) village ( )

47. Usury is forbidden.
(1) drunkenness (2) cheating (3) perjury (4) murder
(5) unlawful interest ( )

48. We saw a large amount of verdure.
(1) snow (2) sand (3) vegetation (4) blood (5) waste land ( )

49. Wend northward.
(1) face (2) go (3) run (4) swim (5) look ( )

50. They wrangle constantly.
(1) laugh (2) fist fight (3) quarrel (4) play (5) cry ( )

Go over this part of the test again to see if you have done as well as you can. Then close the booklet and wait for instructions to start the last part.

Score = number right = ...

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PART III

PARAGRAPH COMPREHENSION

Directions.—This is an exercise to find out how well you can understand the meaning of what you read. It is composed of several paragraphs, followed by questions. Read each paragraph and answer the questions based on it. You may read a paragraph again, if necessary. Make your answers short. Usually one or two words will be enough. Where several choices are given in a question, underline the one you think is correct. Do the sample exercise below.

Sample Exercise

It was a cold and stormy December day. A blinding snow swept down upon the city from the north. A stream of afternoon shoppers hurried along the street with heads bent against the wintry blast.

1. What season of the year was it? .....

2. Was the sun shining? .....

3. Underline the word that tells how the shoppers walked.

(a) slowly (b) leisurely (c) gayly (d) rapidly (e) proudly

Wait for the signal to start. If you have questions, ask them now, as no questions will be answered after the exercise starts. You need not hurry with this part, as a period of twenty minutes will be allowed, which is ample time to cover all the paragraphs.

Paragraph 1

Shaggy was captured when he was a tiny cub and was taken to a town where he was sold to a young man who was very fond of animals. Here he was kindly treated and he soon grew to like his life in captivity. The young bear's master gave him a warm den and plenty of food and often took him for a walk.

1. What kind of animal was Shaggy? .....

2. What was his master's feeling toward animals?

(a) dislike (b) fondness (c) fear (d) amusement (e) indifference

3. How do you think Shaggy felt in captivity?

(a) afraid (b) contented (c) affectionate (d) lonely (e) angry

---

(Go to next page.)

Paragraph 2

The penguin is one of the most interesting birds in the world. He is very curious and takes great pains to inspect any strange object that he sees. Once when some Antarctic explorers were waiting for the ship to take them home, they lived in little tents which they had pitched on the snow about fifty yards from the edge of the sea. Parties of penguins from the neighboring rookery often landed there, and almost invariably the first thing they did on seeing the tents was to go up the slope and inspect them. They would walk all around the tents and would often stay to doze by them for hours. Some of them, indeed, seemed to enjoy the companionship of the men, and none of them showed any sign of fear.

4. In what part of the world did these penguins live?
(a) near the south pole (b) in North America (c) near the equator (d) in Iceland (e) near the north pole

5. What did the penguins do when they first saw the tents?

.....

6. This selection indicates that the attitude of penguins toward man is one of (a) fear (b) suspicion (c) indifference (d) curiosity (e) great friendliness.

Paragraph 3

Drowned valleys are the lower parts of stream valleys which have sunk below sea level. Many rivers are in this condition. The sea extends up the Delaware River to Trenton, and Chesapeake Bay is the drowned valleys of the Susquehanna and its former tributaries. The lower St. Lawrence is perhaps the greatest example of a drowned valley in the world. Some of the world's most famous harbors are drowned valleys. Examples of these are San Francisco Bay, Puget Sound, the Scottish Firths, and the estuaries of the Thames and the Mersey.

7. Copy the three words which describe the altitude of drowned valleys.

.....

8. What is perhaps the greatest example of a drowned valley in the world?

.....

9. Name a bay, not mentioned as one of the most famous harbors in the world, which is said by this writer to be a drowned valley.

.....

(Turn to next page.)

Paragraph 6

The philosophical study of the human experiences connected with the fine arts, beauty, and taste in all relationships is called esthetics. The purpose of esthetics is to bring order and understanding into the many bewildering phenomena covered by the word "beautiful" taken in its widest sense. A student of it needs to possess a rare combination of keen sensibility and clear thinking, cultivated taste and logical rigor. When one of these abilities outstrips the other, mediocre or bad theories are likely to result. An esthetician usually starts from abundant personal experiences and seeks, by critical analysis and interpretation, to establish illuminating generalizations that are conducive to a fuller enjoyment of art.

18. Esthetics deals with what phases of human experience?

.....

19. Esthetics seeks to bring order and understanding into what phenomena? .....

20. According to this paragraph, how does a student of esthetics attempt to establish generalizations that bring about a fuller enjoyment of art?.....

.....

.....

Look over this part of the test again. Perhaps you can improve some of your answers. When you are sure that you have done as well as you can with the test, close the booklet and wait quietly for the others to finish. Read or study if you have a book with you.

Score = number right ..... × 2 = ...

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TRAXLER SILENT READING TEST, FORM 2

For Grades 7 to 10

By ARTHUR E. TRAXLER

Do not write on the test, nor turn the page, until you are asked to do so by the examiner. Fill the blanks below and then read the directions.

Name..... Date.....
Last First

School..... City..... Grade.....

Age..... Sex..... Teacher.....
Years Months M. or F.

General Directions.—This is a test to find out how well you can read. It has three parts. Complete directions for the test are given at the beginning of each part. Read all directions carefully and follow them exactly.

Directions for Part I.—The first part of the test contains a story for you to read and some questions for you to answer after you have read the story. When the signal is given (but not before), turn to page 3. Most of that page contains some questions printed upside down. Do **not** try to read the questions, but look at the bottom of the page where the story begins. The examiner will read those lines aloud and you will read them silently. When the examiner reaches the end of the last line, he will stop reading and you will turn to the next page and continue to read. From time to time, the examiner will say "mark." Put a circle around the word you are reading when that signal is given, and **keep right on reading.** Do not read any part of the story more than once. Read as fast as you can read understandingly, but no faster, as **you cannot answer the questions unless you know what you have read.**

When you finish reading, turn back to page 3, turn the page around, and answer the questions which are based on the story.

Now wait for the signal to turn to page 3. When everyone is ready the examiner will say: "TURN TO PAGE 3 AND LOOK AT THE BOTTOM OF THE PAGE."

Scores will be recorded below.

Part I	1. Reading rate	.....
	2. Story comprehension	.....
Part II	3. Word meaning	.....
Part III	4. Paragraph comprehension	.....
	5. Total comprehension (total of 2, 3, and 4)	.....
	6. TOTAL SCORE (total of 1 and 5)	.....

5. The fight between the muishond and the cobra was carried on (1) in the daytime (2) in total darkness (3) by moonlight (4) just after daybreak (5) by starlight..... ( )

6. The zorilla resembled a (1) kangaroo (2) skunk (3) gerbille (4) hyena (5) fox ..... ( )

7. When the zorilla saw the cobra he (1) walked slowly toward it (2) halted in much surprise (3) ran back a few feet (4) leaped upon the snake at once (5) arched his tail over his back..... ( )

8. The cobra did not harm the muishond because the muishond (1) was immune to cobra venom (2) had a very thick coat of fur (3) avoided his lunges (4) attacked before he could strike (5) remained out of reach..... ( )

9. The muishond won the fight because the snake (1) gave up the battle and tried to flee (2) exhausted its supply of venom (3) relaxed its vigilance (4) became tired out (5) was taken by surprise...( )

10. The muishond killed the cobra (1) for food (2) in self-defense (3) because he liked to kill (4) because he hated all snakes (5) to protect the other animals of the veld..... ( )

(When you have finished the above questions, close the booklet and wait for further directions.)

Score = number right ..... × 2 = ...

Read the story beginning at the bottom of this page *before* you read these questions.

These are the questions on the reading material. **After you have read the story,** you will turn back to this page, turn it around so that the questions are right side up, and then answer the questions on this page and on page 2. Do **not** read the questions before you read the story.

QUESTIONS ON THE STORY

Directions.—Underline the word or phrase which should be used to complete each of the ten statements on this page and the opposite page, and place its number in the parenthesis at the end of the line. **Do not turn back to the reading exercise.**

Example.—This is a test of (1) arithmetic (2) spelling (3) reading (4) geography (5) history ..... (3)

---

1. The veld looked (1) serene and beautiful (2) dry and parched (3) dark and forbidding (4) lonesome and forlorn (5) brilliant and gay ..... ( )

2. The lion surprised and killed the buffalo (1) near the top of a small hill (2) on the banks of a stream (3) in a long, narrow valley (4) in a swamp (5) in a forest..... ( )

3. When he heard the lion roar, the cobra (1) fled in fear (2) reared from the ground and hissed (3) hid in a patch of violet lilies (4) moved rapidly toward the lion (5) lay silent and motionless ( )

4. The lion (1) carried the buffalo to his lair (2) ate as much of it as he could (3) frightened all other animals away from it (4) fought to keep it (5) bounded away and left it..... ( )

(Continue with exercise number 5 on the opposite page.)

YELLOW DEATH

Spring had come to the great African wilderness which is called the veld. There were almond blossoms, drifts of lilies, miles of violets, and

pools of starry narcissi. The kafir trees were blood-red with blossoms 0
and the landscape seemed covered with huge sweet-peas, all lavender 1
and white with crimson centers. Under the warm spring sunshine, the 1
scene was one of serenity and calm beauty. 2

But things were not as peaceful as they seemed. Over at the edge 2
of the swamp, the lord of this vast region, an immense tawny lion, had 3
just made a kill. His prey was a luckless cape buffalo who had been 4
taking a mud bath when he was surprised by the lion and killed in a 4
short fierce struggle. Standing on the body of his fallen foe, the lion 5
raised his head and stared haughtily about him with smouldering eyes. 6
Then he roared loudly across the veld, the very image of proud majesty. 6

But even before the echoes had died away, there sounded close beside 7
the king of beasts a cold, hissing sound. Compared with his roar, it was 8
but a slight noise indeed—yet it was the voice of Death itself. 8

Slowly the seven-foot body of a great serpent, gleaming in the sun- 9
light like burnished gold, with a tinge of crimson and umber on some 9
of its scales, moved out from a patch of violet lilies and reared itself 10
three feet from the ground. The movable ribs just below its neck swelled 11
into the fatal hood of a cape cobra. Above the hood the snake's head, 12
no larger than an English walnut, stared at the lion from red, lidless 12
eyes. The glittering body swayed slowly back and forth, ready to deliver 13
the fatal lunge of its kind. 13

For a moment the king of beasts and the prince of the poison-people 14
faced each other. One blow of the lion's powerful paw would dash out 14
the life of the cobra, but one touch of the snake's hollow fangs would 15
mean death to the great cat. Again the fierce hiss of the serpent cut the 16
air, its body tense and motionless as it made ready to strike. At the 17
sight, the lion bounded away with a snarl, leaving the rigid figure on 17
guard over the slain buffalo. 18

That night a honey-yellow moon came up through the twisted 18
branches of the marula trees. As it slipped through them, all the colors 19
of the great blossoms melted into silver. The spring air was filled with 19
soft calls and cries—the love notes of the veld. Yet death was there, 20
companioning with beauty and love and lurking amid the shadows. 21

(Go to next page.)

Down a game-trail, like a tiny kangaroo, bounded a gerbille, a leaping- 21
mouse with beautiful eyes and a skin like satin lined with silk. Just as 22
the little animal reached a long stretch of the path silvered by the 23
moonlight, there was a flash of yellow and the death which had threatened 23
the lion overtook the mouse. 24

The snake sank his fatal fangs deep into the gerbille's side and clung 24
to the little beast like a bull-dog. It contracted the muscles which 25
encircled the poison-glands in its head until they shot the pale yellow 25
venom in two jets deep into the mouse's body. Swift as fire the poison 26
crept along the nerves of the gerbille until in less than thirty seconds, 27
it reached and paralyzed the heart of the stricken little animal. 27

Even as he trembled and fell dead, a newcomer appeared upon the 28
narrow trail, an animal about a foot long with a black body striped with 29
yellowish white and a white tail. There are few dwellers of the veld who 29
dare face a cape cobra, especially after dark. The little beast approach- 30
ing the grim figure of the snake that night was one of the few. Those 31
little hunters, the Bushmen, call him "Iquaqua," which in their tongue 31
means "Brave One." Scientists have catalogued him as a "zorilla" and 32
to the Boers he is the "muishond." Whatever his name, he is Africa's 32
answer to the challenge of the American skunk. He has the same color- 33
ing, the same devastating gas-attack, which he learned a million years 34
before the Great War, and the same motto, "Don't hurry—others will!" 34

As the fire-red eyes of the cobra caught sight of the unhastening 35
zorilla, the great snake reared up in the moonlight and again the hood of 35
death showed below the fatal, waiting head. At the sight, Iquaqua arched 36
his tail over his back like a pleased cat, only with him the gesture meant 37
a fight to the death. As the little animal trotted along without pause and 38
without haste, the cobra hissed fiercely. At the sound the zorilla's eyes 38
gleamed green in the moonlight and with a succession of tiny, high-pitched 39
yells, he rushed upon the cobra. 39

As he came within range of the snake's fangs, he feinted an attack. 40
Instantly the cobra's head lashed out. There are few movements in 40
nature swifter than the stroke of a snake; no human being could have 41
avoided the lunge. The muishond, however, perfectly balanced on all 41

(Turn to next page.)

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four feet, slipped sidewise away from the cobra's head like the expert 42
little fighter that he was, and the grim head struck the ground with a 43
thump at the exact spot where the black and white battler had stood only 43
a fraction of a second before. However, before he could take advantage 44
of the snake's miss, the cobra had snapped back into position and the 45
duel began once more. 45

For half an hour the fight between the two went on exactly as com- 46
menced. Again and again the zorilla feinted. Again and again the snake 46
struck. Again and again the muishond was not there. Finally, when it 47
seemed as though the contest must end in a stalemate, after an especially 47
desperate lunge the cobra did not rear up quite as instantaneously as it 48
had been doing. When this had happened twice, the muishond stood for a 49
second just beyond the range of the snake's stroke and seemed to regard 49
his opponent with a curious air of calculation. Then for the last time he 50
rushed forward, snapping at the swaying body before him with long, 51
narrow jaws. Once more the cobra lashed out and for half a second lay 51
stretched out on the ground, exhausted by the long fight. That was the 52
moment for which the muishond had waited. Even as the snake started 53
to raise itself the little animal was upon it like a fury, and seizing the 53
reptile just below the hood, with a single lightning-like snap of his long 54
jaws, crushed the cobra's backbone at that point. 54

Immediately the striped battler gripped the snake's gleaming body 55
again and again, each time piercing its spine until it lay stretched out, 55
writhing but paralyzed. Then with an air of grim confidence, the muishond 56
approached the cobra, gnawed the deadly head from that long body 57
and swallowed it. He evidently knew that the gastric juices possess 57
the property of rendering snake venoms harmless, or perhaps instinct 58
told him this fact of natural life. A moment later the little beast was 58
feeding upon the flesh of one of the few creatures of the veld which had 59
ever driven a lion away from his kill. 60

(Now turn back to page 3 and answer the questions.)

This story is adapted from *Yellow Death* by Samuel Scoville, Jr., of Philadelphia, and is used with the permission of the author.

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PART II

WORD MEANING

Directions.—In each of the exercises below you should read the sample sentence or expression, then read the five words or phrases following it, and select the one whose meaning is most nearly like the meaning of the word which is underlined in the sentence. Draw a line under the word thus selected and **place its number in the parenthesis at the right.** Notice the example:

Example.—They will invite him to go.
(1) tell (2) command (3) ask (4) forbid (5) select (3)

---

1. An adequate solution.
(1) intelligent (2) quick (3) inferior (4) clever (5) satisfactory ( )

2. We stood aghast.
(1) motionless (2) in anger (3) amused (4) aside (5) horrified ( )

3. The apparition appeared regularly.
(1) ghost (2) dream (3) animal (4) idea (5) face ( )

4. An auxiliary organization.
(1) assisting (2) large (3) business (4) social (5) ancient ( )

5. His baseness was unbelievable.
(1) misery (2) sorrow (3) power (4) meanness (5) stubbornness ( )

6. It boded no evil.
(1) feared (2) did (3) foretold (4) allowed (5) contained ( )

7. A candid reply.
(1) sweet (2) reasonable (3) frank (4) cunning (5) shrewd ( )

8. The cleaver is sharp.
(1) knife (2) spear (3) sword (4) chopper (5) ax ( )

9. A fitting comment.
(1) reply (2) remark (3) verdict (4) decision (5) garment ( )

10. The constable halted him.
(1) country policeman (2) sentry (3) stranger (4) guard (5) bandit ( )

(Go to next page.)

11. Corruption of high officials.
(1) hatred (2) dishonesty (3) leadership (4) ignorance (5) cruelty ( )

12. Their creed is excellent.
(1) doctrine (2) loyalty (3) sincerity (4) attention (5) action ( )

13. A deficiency in materials.
(1) rise in price (2) loss (3) inferiority (4) over supply (5) lack ( )

14. They deride the custom.
(1) follow (2) dislike (3) approve (4) ridicule (5) teach ( )

15. Discern the meaning.
(1) learn (2) know (3) distinguish (4) discuss (5) remember ( )

16. A divination of success.
(1) definition (2) achievement (3) glimpse (4) forecast (5) realization ( )

17. Durable material.
(1) rough (2) thin (3) lasting (4) satisfactory (5) worn out ( )

18. An epoch of prosperity.
(1) vision (2) prediction (3) century (4) sign (5) era ( )

19. A bitter feud.
(1) taste (2) strife (3) enemy (4) medicine (5) speech ( )

20. A mass of foliage.
(1) weeds (2) grass (3) trees (4) bushes (5) leaves ( )

21. A gaunt man.
(1) tall (2) sick (3) fat (4) fierce (5) lean ( )

22. A full granary.
(1) stomach (2) storehouse (3) barn (4) box car (5) boat ( )

23. The guise of a prophet.
(1) robe (2) beard (3) vision (4) manner (5) guidance ( )

24. The hazard is great.
(1) fear (2) hope (3) risk (4) height (5) offense ( )

25. Do not imperil your future.
(1) forfeit (2) waste (3) sacrifice (4) endanger (5) doubt ( )

(Turn to next page.)

26. An inoffensive manner.
(1) aggressive (2) not agreeable (3) haughty (4) sincere (5) unobjectionable ( )

27. They intrude without warning.
(1) attack (2) speak up (3) force in (4) strike (5) advance ( )

28. The mediator between them.
(1) agent (2) screen (3) peacemaker (4) friendship (5) quarrel ( )

29. A mutinous army.
(1) well disciplined (2) rebellious (3) hungry (4) battle scarred (5) victorious ( )

30. Nominate your candidate.
(1) elect (2) introduce (3) bring (4) withdraw (5) name ( )

31. A beautiful ode.
(1) melody (2) child (3) sunset among the hills (4) poem suited to be set to music (5) picture of natural scenery ( )

32. A packet of letters.
(1) pile (2) box (3) bag (4) collection (5) package ( )

33. The perennial question.
(1) foolish (2) hard (3) ancient (4) continuous (5) next ( )

34. He saw a phantom.
(1) specter (2) light carriage (3) tornado (4) bird (5) disaster ( )

35. Plait the strands.
(1) cut (2) braid (3) cover (4) comb (5) part ( )

36. A precocious child.
(1) intelligent (2) quarrelsome (3) happy (4) early-maturing (5) feeble-minded ( )

37. The privacy of the judge's chamber.
(1) comfort (2) seclusion (3) refinement (4) doorway (5) justice ( )

38. He is a rebellious child.
(1) unusually bright (2) docile (3) sullen (4) unmanageable (5) angry ( )

39. Repress the impulse.
(1) satisfy (2) beware (3) forget (4) restrain (5) modify ( )

40. They revile their opponents.
(1) dislike (2) fight (3) abuse (4) injure (5) admire ( )

(Go to next page.)

41. The rôle of the actor.
(1) costume (2) humor (3) life (4) popularity (5) part ( )

42. A scullion of the tenements.
(1) kitchen helper (2) small boy (3) disease (4) thief (5) street cleaner ( )

43. A sleek animal.
(1) slender (2) cunning (3) beautiful (4) glossy (5) faithful ( )

44. The ancient stile.
(1) fashion (2) steps (3) fence (4) log cabin (5) tower ( )

45. Do not trespass here.
(1) sit (2) walk (3) exercise in excess (4) search without a warrant (5) enter unlawfully ( )

46. A turbulent community.
(1) quiet (2) dangerous (3) large (4) prosperous (5) riotous ( )

47. Articles of utility.
(1) usefulness (2) steel (3) foreign make (4) beauty (5) value ( )

48. His clothing was covered with vermin.
(1) filth (2) white fur (3) insects (4) snow (5) medals ( )

49. A volley of musketry.
(1) book (2) battle (3) view (4) discharge (5) attack ( )

50. The wrathful owner.
(1) gloomy (2) very angry (3) lonely (4) justly proud (5) ill-tempered ( )

Go over this part of the test again to see if you have done as well as you can. Then close the booklet and wait for instructions to start the last part.

Score = number right = ...

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PART III

PARAGRAPH COMPREHENSION

Directions.—This is an exercise to find out how well you can understand the meaning of what you read. It is made up of several paragraphs, followed by questions. Read each paragraph and answer the questions based on it. You may read a paragraph again if necessary. Make your answers short. Usually one or two words will be enough. Where several choices are given in a question, underline the one you think is correct. Do the sample exercise below.

Sample Exercise

It was a cold and stormy December day. A blinding snow swept down upon the city from the north. A stream of afternoon shoppers hurried along the street with heads bent against the wintry blast.

1. What season of the year was it? .....

2. Was the sun shining? .....

3. Underline the word that tells how the shoppers walked.
(a) slowly (b) leisurely (c) gayly (d) rapidly (e) proudly

Wait for the signal to start. If you have questions, ask them now, as no questions will be answered after the exercise starts. You need not hurry with this part, as a period of twenty minutes will be allowed, which is ample time to cover all the paragraphs.

Paragraph 1

Jim thought the tenth of April was a very important date, for he was eleven years old on that day. His parents had given him a tool chest for a birthday present, and as he walked proudly out of the back door into the morning sunshine, he was wondering what he could make first with his new tools. He had hardly gone as far as the pump when he heard a soft bird voice from the old apple tree in the yard, and a bluebird fluttered down almost at his feet. He decided at once that he would like to make a bird house; so he hurried away to the barn to find his father and talk the matter over with him.

1. Why did Jim think the tenth of April was an important day?

.....

.....

2. What did he decide to make with his new tools? .....

3. The scene of this story is probably (a) on the seacoast (b) in Canada (c) in the country (d) in the city (e) in an apple orchard.

(Go to next page.)

Paragraph 2

Even when he took a few hours of rest from fighting and robbing, the pirate Blackbeard, who was the scourge of the Atlantic Coast in the early eighteenth century, demanded some interesting excitement. Once as he was eating dinner with his mate and two sailors, he took up a pair of pistols, cocked them, and put them under the table. One of the sailors, observing this peculiar action, left the table suddenly, with the excuse that he had something very important to do on deck. The others watched in astonishment and anxiety to see what their captain would do next. They did not have long to wait. Suddenly Blackbeard crossed the pistols under the table and fired them. One of the bullets struck no one, but the other hit the mate in the leg. Blackbeard laughingly put away his pistols, remarking that if he did not shoot one of his men now and then, they would forget what sort of person he was.

4. How many men were eating dinner with Blackbeard? .....

5. What words indicate the feelings of Blackbeard's companions as they watched to see what he would do next? .....

.....

.....

6. Blackbeard fired the pistols
   (a) because he was angry.
   (b) for amusement.
   (c) because he disliked the mate.
   (d) to show his men how straight he could shoot.
   (e) because he had suddenly gone insane.

7. Which of the following words best characterizes Blackbeard?
(a) brave (b) handsome (c) cowardly (d) savage (e) clever

(Turn to next page.)

Paragraph 3

Although people write prose more commonly than they write poetry, there is little question that truly fine prose is more rare than truly fine poetry. It seems to be more difficult to attain mastery in prose than mastery in verse. The very fact that there is greater freedom in prose gives wider scope for failure. Poetry is like a boat gliding down a flowing and familiar river, where the banks are a safe and sure guide. Prose may be compared to a lonely skiff upon a boundless sea, where many strange ships are sailing in contrary directions. The lack of conventions in the writing of prose probably explains why the higher triumphs of prose come later and come to fewer than do the great triumphs of verse.

8. Is truly fine poetry more common than truly fine prose? .....

9. In comparing the higher triumphs of prose with the great triumphs of verse, the writer says that the former (a) come earlier (b) are more important (c) come to fewer (d) are less important (e) come to more.

10. Prose is like a boat on (a) a lake (b) a familiar river (c) a dangerous stream (d) an ocean (e) a small pond.

Paragraph 4

It is said, sometimes, that people are masters of their destinies, but the truth is that all men are creatures of their training in that their prejudices and their problems are in a large measure determined for them. In politics, for example, a man usually follows his parents and is democratic or republican, liberal or conservative, largely because his parents were. An individual is indoctrinated with beliefs, preferences, and tastes during childhood and adolescence when his powers of resistance are low. Later in life these ideas acquired uncritically in his youth persist tenaciously and are often barriers to intellectual progress.

11. According to this paragraph, what is the chief influence in determining a man's political preference? .....

.....

12. The writer of this paragraph says that the ideas with which one is indoctrinated in youth frequently have what relation to intellectual progress?

.....

13. This paragraph leads you to believe that people are (a) always like their parents (b) masters of their destinies (c) greatly interested in politics (d) much influenced by training (e) never do any thinking of their own.

(Go to next page.)

Paragraph 5

At the very foundation of the problem of law enforcement lies the problem of law making. If the latter is unrepresentative, if it does not express the majority opinion of our citizenship, there will not be that respect and general observance which are essential to the successful administration of the law. So long as we shirk this truth, efforts to improve the application of the statutes and exhortations to respect the abstract idea of government will be ineffectual. In a system of free representative government no law will win obedience which is not representative of the common conscience or the general sense of expediency.

14. How does the writer think that improvement in law enforcement should be brought about? .....

.....

15. What two things are essential to the successful administration of the law? .....

.....

16. If a law is not representative of the common conscience, what will be its outcome? .....

(Turn to next page.)

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Paragraph 6

Authority, thought of as a source of knowledge, always depends ultimately upon somebody's direct knowledge. An authoritarian appeal to the criterion of numbers, that is, the claim that because thousands believe something to be true it must be true, adds weight to an argument only when the ultimate source of knowledge is recognized as something other than authority. The same statement may be made about the appeal to the criterion of age. The antiquity of an idea is proof of its truth only when it can be shown that someone, somewhere, secured direct knowledge by verifying the theory scientifically in his own experience. Ideas may circulate for years among thousands until they are shown to be false by the scientific tests of the expert. We as individuals are much too willing to accept the unimpugned testimony of others rather than to inquire into its origin.

17. Is authority a source of knowledge? .....

18. How may the unsoundness of ideas of long standing be discovered?

.....

.....

19. The main thought in this paragraph is:
    - (a) If thousands believe something it is usually true.
    - (b) The antiquity of an idea is no proof of its truth.
    - (c) False ideas may be current for years.
    - (d) Every theory can be verified scientifically.
    - (e) The basis of authority is direct knowledge.

20. We may infer from this paragraph that we should
    - (a) be more willing to accept what other people say.
    - (b) believe unverified testimony.
    - (c) consider testimony critically.
    - (d) never believe anything we hear.
    - (e) try to verify all testimony ourselves.

Look over this part of the test again. Perhaps you can improve some of your answers. When you are sure that you have done as well as you can with the test, close the booklet and wait quietly for the others to finish. Read or study if you have a book with you.

Score = number right ..... × 2 = ...

TERMAN GROUP TEST OF MENTAL ABILITY

For Grades 7 to 12

Prepared by Lewis M. Terman, Stanford University, California

EXAMINATION: FORM B

1. Name .....
   First name Last name
2. Boy or girl .....Grade .....High or Low .....
3. Age last birthday .....Date of birthday .....
   Month Day Year
4. Name of city (or county) .....
5. Name of school .....
6. Name of teacher .....
7. Date of this examination .....19.....
   Month Day Year

Do not turn the page until you are told to.

Test	Score	Remarks or Further Data
1. Information		
2. Best Answer		
3. Word Meaning		
4. Logical Selection		
5. Arithmetic		
6. Sentence Meaning		
7. Analogies		
8. Mixed Sentences		
9. Classification		
10. Number Series		
Total		

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FORM B

TEST 1. INFORMATION

Draw a line under the ONE word that makes the sentence true, as shown in the sample.

SAMPLE. Our first President was
Adams Jefferson Lincoln Washington

1 The most gold is produced in
Alaska Tennessee Texas New York 1
2 A peck is a fourth of a
barrel bushel gallon keg 2
3 The Yale is a kind of
screw lock hammer wrench 3
4 Chalk is a kind of
flour limestone slate marble 4
5 Among birds that migrate are
eagles hawks owls robins 5

6 Sonata is a term used in
drawing football mathematics music 6
7 Socrates was a
politician philosopher scientist general 7
8 " Treasure Island " tells about
Micawber Uncas Long John Mowgli 8
9 The Pharaohs were kings of
Babylon Egypt Jerusalem Rome 9
10 Long-distance running most often injures the
heart legs stomach nerves 10

11 The dynamo produces
dynamite electricity powder gas 11
12 Polo is a kind of
disease firearm game work 12
13 A barometer measures
air-pressure distance electricity time 13
14 Asbestos comes from
bones cotton mines wool 14
15 An eight-sided figure is called a
trapezium scholium parallelogram octagon .. 15

16 Tweed is a kind of
cloth drink instrument weed 16
17 The turquoise is usually
blue brown red yellow 17
18 The bat is most closely related to the
butterfly mouse owl swallow 18
19 Perjury is a term used in
pedagogy law theology medicine 19
20 " Robinson Crusoe " was written by
Stevenson Hawthorne Defoe Cooper 20

Right .....

TEST 2. BEST ANSWER

Read each question or statement and make a cross before the BEST answer, as shown in the sample.

SAMPLE

Why do we buy clocks? Because
1 We like to hear them strike.
2 They have hands.
× 3 They tell us the time.

1 **We should "think twice before we speak," because**
1 We may think of more things to say.
2 We are then more sure to say the right thing.
3 If we speak too quickly, we may stammer.

2 **The saying, "Idle brains are the devil's workhouse," means**
1 The devil works with his brains.
2 People should not work for the devil.
3 People who are idle get into trouble.

3 **The saying, "It's an ill wind that blows nobody good," means that**
1 People often profit from the misfortunes of others.
2 Winds do great damage.
3 Winds never do any good.

4 **The saying, "Destroy the lion while it is young," means**
1 It is wicked to kill lions when they are old.
2 Young lions are most dangerous.
3 Weed out bad habits before they are too firmly established.

5 **The saying, "The proof of a pudding is in the eating," means**
1 Puddings are made to be eaten.
2 Puddings should be tested before they are served.
3 We can only tell what a thing is like by trying it.

6 **Why are electrical engineers highly paid? Because**
1 Their ability is much in demand.
2 They have a college education.
3 They work long hours.

7 **Freezing water bursts pipes because**
1 Cold makes the pipes weaker.
2 Water expands when it freezes.
3 The ice stops the flow of water.

8 **Why should we have Congressmen? Because**
1 The people are too many to meet and make their laws.
2 The people must be ruled.
3 Congressmen are usually honest.

9 **The cause of echoes is**
1 The reflection of sound waves.
2 The presence of electricity in the air.
3 The presence of moisture in the air.

10 **If a man had a million dollars he ought to**
1 Pay off the national debt.
2 Contribute to various worthy charities.
3 Give it all to some poor man.

11 **The saying, "A bad workman quarrels with his tools," means**
1 A bad workman is usually quarrelsome.
2 If the workman loses his temper, he is likely to break his tools.
3 A bad workman often excuses himself by blaming his tools.

Right..... × 2 = *Score*.....

TEST 3. WORD MEANING

When two words mean the SAME, draw a line under "SAME."
When they mean the OPPOSITE, draw a line under "OPPOSITE."

SAMPLES	fall — drop	same — opposite	
	north — south	same — opposite	
1	alert — sluggish	same — opposite	1
2	active — passive	same — opposite	2
3	procure — obtain	same — opposite	3
4	minimum — maximum	same — opposite	4
5	kindle — quench	same — opposite	5
6	hazardous — dangerous	same — opposite	6
7	exit — entrance	same — opposite	7
8	chasm — abyss	same — opposite	8
9	agile — nimble	same — opposite	9
10	remote — near	same — opposite	10
11	expand — contract	same — opposite	11
12	abhor — detest	same — opposite	12
13	competent — qualified	same — opposite	13
14	entice — allure	same — opposite	14
15	concave — convex	same — opposite	15
16	gravity — levity	same — opposite	16
17	sacred — hallowed	same — opposite	17
18	con — pro	same — opposite	18
19	adversary — opponent	same — opposite	19
20	optional — compulsory	same — opposite	20
21	defile — purify	same — opposite	21
22	senile — aged	same — opposite	22
23	illustrious — exalted	same — opposite	23
24	profuse — scanty	same — opposite	24
25	inert — energetic	same — opposite	25
26	heinous — atrocious	same — opposite	26
27	caprice — whim	same — opposite	27
28	apathy — indifference	same — opposite	28
29	acid — alkaline	same — opposite	29
30	indict — arraign	same — opposite	30

Right ..... *Wrong* ..... *Score* .....

TEST 4. LOGICAL SELECTION

In each sentence draw a line under the TWO words that tell what the thing ALWAYS has. Underline TWO, and ONLY TWO, in each line.

SAMPLE. A man always has
body cap gloves mouth money

1 A snake always has
pcison rattle stripes tail tongue 1
2 A bicycle always has
brakes frame rubber pump wheels 2
3 A box always has
depth hinge lid sides wood 3
4 Food always has
nutriment salt starch sweetness taste 4
5 A soldier always has
bayonet commander duty flag tent 5

6 An automobile always has
battery motor top wheels wind-shield 6
7 A policeman always has
authority cap club duty uniform 7
8 A newspaper always has
advertisements cartoons editor news pictures 8
9 An official always has
badge duties rights salary uniform 9
10 A nation always has
army inhabitants laws navy rivers 10

11 A debtor always has
creditor freedom honesty obligation property 11
12 Night always has
darkness hours moon stars stillness 12
13 A wheel always has
center circumference spokes tire wood 13
14 Anxiety always involves
awe dread grief insomnia uneasiness 14
15 Admiration always involves
esteem flattery humility love respect 15

16 A store always has
bookkeeper cash-box clerks keeper supplies 16
17 An invention always has
inventor machinery newness patent value 17
18 A gentleman is always
considerate educated honest wise witty 18
19 A duet always has
accompaniment instruments performers music voices .. 19
20 Antipathy always involves
antagonism disgust dislike fear jealousy 20

Right .....

TEST 5. ARITHMETIC

Find the answers as quickly as you can.
Write the answers on the dotted lines.
Use the bottom of the page to figure on.

---

1 Frank has 12 marbles. He bought 3 more, and then lost 6. How many had he left? *Answer*.....

2 What number multiplied by 16 equals 24×2? *Answer*.....

3 A man bought some sheep for \$150. He sold them for \$200, gaining \$5 per head. How many did he buy? *Answer*.....

4 John earns \$2.50 per day, James \$3.75 per day. How much more does James earn than John in forty days? *Answer*.....

5 How many quarts of water will a can $6 \times 10 \times 12$ inches hold if a quart is 60 cubic inches? *Answer*.....

6 A boy had $\frac{3}{8}$ of a bushel of nuts and sold half of them. What fraction of a bushel had he left? *Answer*.....

7 A man bought a horse for \$160 and sold it for \$200. The gain was what per cent of the cost? *Answer*.....

8 If $2\frac{1}{2}$ dozen eggs cost \$2, what is the price per dozen? *Answer*.....

9 Half of what number equals $\frac{1}{3}$ of 21? *Answer*.....

10 A borrows \$500 at $7\frac{1}{4}$ per cent, and B borrows \$500 at $6\frac{1}{4}$ per cent. How much more interest does A pay in a year than B? *Answer*.....

11 $\frac{3}{4}$ of a bushel of nuts is divided equally among five people. What fraction of a bushel does each get? *Answer*.....

12 If $4\frac{1}{2}$ tons of hay cost \$36, what will $2\frac{1}{2}$ tons cost? *Answer*.....

Right.....$\times 2 =$ *Score*.....

TEST 6. SENTENCE MEANING

Draw a line under the right answer, as shown in the samples.

SAMPLES	Is coal obtained from mines?	Yes	No	
	Are all men six feet tall?	Yes	No	
1	Are cartoons made by cameras?	Yes	No	1
2	Are transparent substances used in windows?	Yes	No	2
3	Do hoboes ever wear dilapidated garments?	Yes	No	3
4	Is burlap a kind of lumber?	Yes	No	4
5	Do hermits usually live in seclusion?	Yes	No	5
6	Can time be measured with a barometer?	Yes	No	6
7	Are invalids usually elated?	Yes	No	7
8	Is a hypocrite usually insincere?	Yes	No	8
9	Do all birds have instincts?	Yes	No	9
10	Are conspicuous objects readily seen?	Yes	No	10
11	Does a quotient result from multiplication?	Yes	No	11
12	Do lagoons migrate periodically?	Yes	No	12
13	Do novelists ever prefer realism?	Yes	No	13
14	Is astigmatism a form of religion?	Yes	No	14
15	Does an anæsthetic allay pain?	Yes	No	15
16	Are prostrate forms often vertical?	Yes	No	16
17	Are divergent aims usually harmonious?	Yes	No	17
18	Do sovereigns owe allegiance to their subjects?	Yes	No	18
19	Are discreet persons usually trustworthy?	Yes	No	19
20	Have enfranchised people the right to vote?	Yes	No	20
21	Do retrograde movements lead to progress?	Yes	No	21
22	Is a parasite a living organism?	Yes	No	22
23	Does synthesis mean putting together?	Yes	No	23
24	Should deleterious habits be emulated?	Yes	No	24

Right.....*Wrong*.....*Score*.....

TEST 7. ANALOGIES

SAMPLES
Ear is to hear as eye is to
table see hand play
Hat is to head as shoe is to
arm coat foot leg

Do them all like samples.

---

1 Picture is to see as sound is to
noise music hear bark 1
2 Uncle is to nephew as aunt is to
brother sister niece cousin 2
3 Add is to subtract as multiply is to
add divide arithmetic increase 3
4 Shell is to nut as skin is to
person soft white coarse 4
5 Tree is to forest as person is to
couple men women crowd 5

6 Stone is to marble as wood is to
tall cut oak pile 6
7 10 is to 100 as 12 is to
16 24 144 288 7
8 Abide is to depart as stay is to
over home play leave 8
9 Food is to man as fuel is to
engine burn coal wood 9
10 Author is to book as artist is to
painter brush picture easel 10

11 Complex is to simple as hard is to
brittle money easy work 11
12 Imitate is to copy as invent is to
originate study Edison machine 12
13 Bad is to worse as worse is to
worst better best good 13
14 Wolf is to sheep as cat is to
fur kitten dog mouse 14
15 Past is to present as yesterday is to
today tomorrow Christmas gone 15

16 Go is to went as rise is to
fall rose rising fell 16
17 Square is to cube as circle is to
line round square sphere 17
18 Policeman is to officer as dictionary is to
words book large school 18
19 $\frac{4}{3}$ is to $\frac{1}{3}$ as 8 is to
10 6 4 2 19
20 Seldom is to never as little is to
small none large often 20

Right .....

TEST 8. MIXED SENTENCES

The words in each sentence below are mixed up. If what a sentence means is TRUE, draw a line under " TRUE." If what it means is FALSE, draw a line under " FALSE."

SAMPLES	hear are with to ears	true	false	
	eat gunpowder to good is	true	false	
1	countries several produced wheat in is	true	false	1
2	pays cautious it be to often	true	false	2
3	north all railroads south and run	true	false	3
4	men industrious pay good should get	true	false	4
5	temperatures freezes water high at	true	false	5
6	birds on their nests ground the some make	true	false	6
7	to is it easy a mud deep through drive car	true	false	7
8	sleepy work is is hard it to when one	true	false	8
9	friends in us disaster often false desert	true	false	9
10	is it all away throw wisest money to one's	true	false	10
11	wind when the the all blows fall trees	true	false	11
12	feeling is of painful exaltation the	true	false	12
13	seldom birds' diamonds nests are in found	true	false	13
14	inflict men pain needless cruel sometimes	true	false	14
15	always sleeplessness clear causes a conscience	true	false	15
16	rich rich have born all men been	true	false	16
17	and emotions sorrow similar grief are	true	false	17
18	knows than pupil a teachers always his more	true	false	18

Right.....*Wrong*.....*Score*.....

TEST 9. CLASSIFICATION

SAMPLES { 1 bullet cannon gun sword pencil
2 Canada Chicago China India France

In each line cross out the word that does not belong there.
Cross out JUST ONE WORD in each line.

---

1 elm brier maple oak poplar 1
2 needle pan stitch thimble thread 2
3 Governor King Mayor President Priest 3
4 baby calf colt doll kitten 4
5 Democrat Methodist Republican Tory Whig 5

6 Cæsar Grant Napoleon Shakespeare Washington 6
7 Anna Emma John Lucy Sarah 7
8 heart ears eyes nose tongue 8
9 close distant far loud near 9
10 author essay novel poem story 10

11 cat cow dog pig wolf 11
12 blackboard chalk crayon pen pencil 12
13 clay pebble rock stone wood 13
14 automobile barometer clock speedometer thermometer 14
15 algebra arithmetic geometry history trigonometry 15

16 alfalfa clover corn grass timothy 16
17 carefulness forethought industry poverty thrift 17
18 beg borrow earn inherit lend 18

Right.....

TEST 10. NUMBER SERIES

SAMPLES	5	10	15	20	25	30	35
	20	18	16	14	12	10	8

In each row try to find out how the numbers are made up, then on the two dotted lines write the TWO numbers that should come next.

1st Row				3	4	5	6	7	8	....	....
2d Row			3	6	9	12	15	18		....	....
3d Row		10.8	9.7	8.6	7.5	6.4	5.3			....	....
4th Row			5	6	8	9	11	12		....	....
5th Row			27	27	23	23	19	19		....	....
6th Row			0	$\frac{2}{3}$	$1\frac{1}{3}$	2	$2\frac{2}{3}$	$3\frac{1}{3}$		....	....
7th Row			576	288	144	72	36			....	....
8th Row					2	10	50			....	....
9th Row			30	33	34	37	38	41		....	....
10th Row	23	22	21	19	18	17	15	14		....	....
11th Row			$\frac{3}{32}$	$\frac{3}{16}$	$\frac{3}{8}$	$\frac{3}{4}$	$1\frac{1}{2}$	3		....	....
12th Row			81	27	9	3	1	$\frac{1}{3}$		....	....

Right ..... × 2 = *Score* .....

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STANDARDIZED ORAL READING PARAGRAPHS

By William S. Gray

Name.....Age Today.....
Years Months

Race.....Sex.....Grade.....

City.....State.....Date.....

School.....Teacher.....

Directions to the Teacher

Each child should be tested apart from the others in a room by himself. Give him an unused folder. Take another folder and fill in the above blanks before beginning the reading. As the child reads, record his efforts, using the marks presented on the class record sheet, and following the directions printed there as accurately as possible.

1

A boy had a dog.
The dog ran into the woods.
The boy ran after the dog.
He wanted the dog to go home.
But the dog would not go home.
The little boy said,
"I cannot go home without my dog."
Then the boy began to cry.

2

Once there was a little pig.
He lived with his mother in a pen.
One day he saw his four feet.
"Mother," he said, "what can I do with my feet?"
His mother said, "You can run with them."
So the little pig ran round and round the pen.

3

Once there was a cat and a mouse. They lived in the same house. The cat bit off the mouse's tail. "Pray puss," said the mouse, "give me my long tail again."
"No," said the cat, "I will not give you your tail till you bring me some milk."

4

Once there lived a king and a queen in a large palace. But the king and queen were not happy. There were no little children in the house or garden. One day they found a poor little boy and girl at their door. They took them into the beautiful palace and made them their own. The king and queen were then happy.

5

One of the most interesting birds which ever lived in my bird-room was a blue-jay named Jackie. He was full of business from morning till night, scarcely ever still. He had been stolen from a nest long before he could fly, and he had been reared in a house long before he had been given to me as a pet.

6

The part of farming enjoyed most by a boy is the making of maple sugar. It is better than blackberrying and almost as good as fishing. One reason why a boy likes this work is that someone else does most of it. It is a sort of work in which he can appear to be very industrious and yet do but little.

7

It was one of those wonderful evenings such as are found only in this magnificent region. The sun had sunk behind the mountains, but it was still light. The pretty twilight glow embraced a third of the sky, and against its brilliancy stood the dull white masses of the mountains in evident contrast.

8

The crown and glory of a useful life is character. It is the noblest possession of man. It forms a rank in itself, an estate in the general good will, dignifying every station and exalting every position in society. It exercises a greater power than wealth, and is a valuable means of securing honor.

9

He was approximately six feet tall and his body was well proportioned. His complexion inclined to be florid; his eyes were blue and remarkably far apart. A profusion of hair covered the forehead. He was scrupulously neat in his appearance; and, although he habitually left his tent early, he was well dressed.

10

Responding to the impulse of habit Josephus spoke as of old. The others listened attentively but in grim and contemptuous silence. He spoke at length, continuously, persistently, and ingratiatingly. Finally exhausted through loss of strength he hesitated. As always happens in such exigencies he was lost.

11

The attractions of the American prairies as well as of the alluvial deposits of Egypt have been overcome by the azure skies of Italy and the antiquities of Roman architecture. My delight in the antique and my fondness for architectural and archaeological studies verges onto a fanaticism.

12

The hypotheses concerning physical phenomena formulated by the early philosophers proved to be inconsistent and in general not universally applicable. Before relatively accurate principles could be established, physicists, mathematicians, and statisticians had to combine forces and work arduously.

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